FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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Hatch of Broiler Chicks Remains Ahead of 1956

WASHINGTON—Despite low broiler prices, the hatch of broiler chicks in September remained ahead of a year ago, and total production of chicks by commercial hatcheries during September was up 8% from a year ago.

This is shown in the U.S. Department of Agriculture's latest hatchery report.

Turkey Poult production, at a seasonally low point, was down from a year ago.

The number of chicks produced during September was 131,913,000, with broiler chicks accounting for all of the 8% increase over September, 1956.

Broiler chicks hatched during September, which accounted for 89% of all chicks hatched, totaled 117,379,000. This was an increase of 10% over a year earlier. The increase was largely in southern areas. The number of broiler chicks produced during the first nine months of this year was 1,184,979,000—an increase of 5% over a year earlier.

Bigger October Hatch

There were variations by regions, but over-all, the number of eggs in incubators on Oct. 1 was up 10% from a year ago, indicating a larger hatch of broiler chicks in October this year than last. The increase was accounted for largely by the middle and south Atlantic and east south central states.

Numbers of chicks produced for egg production are now at a seasonally low point, and the total for September was 14,534,000 — down 2% from a year earlier. Chicks produced for egg production during the first nine months of the year were down 18% from 1956.

The number of non-broiler eggs in

(Turn to HATCH, page 88)

Price Lag Continues For Delmarva Broilers

SALISBURY, MD.—Broiler prices in the Delmarva area continued the slide downward last week with prices averaging 17.01¢ lb. on the farm. This set a new low record for 1957. A week ago the average price was 17.19¢ and a year ago, 17.22¢.

However, feed prices slid lower too. Last week the average price per ton of 20% mash was $93.62. The week before it was nearly $1 more.

Probably the largest contributing factor for the low broiler price was the supply. Delmarva producers sent 3,663,000 broilers to market last week. This was 4% more than the previous week and 23% above 1956.

Hatcherymen across the nation in 22 reporting states placed 24,102,000 broiler chicks on farms last week. This was 2% less than the previous week, but 10% above the corresponding week a year ago.

Hatcherymen in the 22 states set 31,802,000 eggs. This was 1% more than the previous week and 7% above the corresponding week a year ago.

Effort to Make Feed Labeling More Uniform Gets Added Support at Control Meeting

By GEORGE GATES
Editor of Feedstuffs

WASHINGTON — The effort to make feed labeling more meaningful and uniform throughout the U.S. was given added support at the annual convention of the Association of American Feed Control Officials Oct. 16-17 at the Shoreham Hotel.

The executive committee of the organization accepted the recommendation of its medicated feed labeling committee that "the association and its individual members continue to support and gain compliance with the type labels previously accepted and to be included in the 1958 AAFCO official publication."

It was also decided that the official publication for 1958 include a revised section clearly setting forth the usage of the approved labels.

The American Feed Manufacturers Assn., which has worked with AAFCO in instructing feed manufacturers on the use of the various types of labels for medicated feeds, is planning further efforts along this line.

Registration Form

Lack of agreement among various states concerning adoption of a uniform registration form was reported at the convention. The executive committee noted that it is possible that some slight modification in the uniform form, adopted last year, might result in more universal acceptance.

A comprehensive report on analytical methods for new medicated products was presented and, with its acceptance, it was suggested that the committee work with industry, the Food and Drug Administration, control laboratories and the Association of Official Agricultural Chemists in an effort to establish workable methods for analyzing new drugs for use in control laboratories as soon as possible.

Registration at the convention totaled 323. Present in addition to 103 members of AAFCO were representatives of FDA and the feed industry.

Official actions of the organization included adoption of a number of new definitions for feed products, changing of others from tentative status to official status and revisions in some definitions.

Informal Discussion

An opportunity to discuss informally a number of control problems was provided feed manufacturers at the AAFCO's states relations committee meeting the evening of Oct. 15. W. B. Griem, Wisconsin control official, presided.

Among the proposals talked over was the possibility of establishing a flexible system of registration which would permit inclusion of alternate grains in formulas when economics dictated a change. Also discussed was the requirement for including listings on tags of the carriers used for drug

(Turn to CONTROL, page 89)

Nutrition Research Council Hears Techniques Discussed

By PAUL L. DITTEMORE
Feedstuffs Staff

WASHINGTON — The techniques of research as well as the results were given consideration at the annual meeting of the Animal Nutrition Research Council, held in conjunction with the meeting of the Association of American Feed Control Officials. The meetings were held at the Shoreham Hotel Oct. 16-17.

Design of an experimental broiler farm was discussed by Dr. D. S. Carver, a member of the staff at the research farms of the Larro division of General Mills, Inc., Indianola, Iowa. This research facility is comparatively new, and Dr. Carver pointed out that in planning the broiler farm, equal consideration had to be given to the requirements for adequate control of all factors involved in a research program as well as to factors which enter into commercial broiler production.

Cost of the different buildings, expressed in dollars per square foot, varied from $13.05 for the battery house, $6.66 for the broiler research building and $3.03 for the commercial broiler house, he said. In concluding his detailed recitation of the features of the buildings, Dr. Carver advised his audience that if they were considering construction of comparable units, not to "skimp" by reducing the cost of insulation for the buildings, to plan for installation of heating and ventilating systems which can be thermostatically controlled, and to select the best type of feed troughs so as to control wastage.

Dr. Walter A. Glista, Chas. M. Cox Co., Boston, told of his com-

(Turn to RESEARCH, page 88)

Removal of Benson Sought; "Brannan Plan" Suggested

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Reliable evidence has turned up here that a yet-to-be-disclosed political force is working to replace Ezra Taft Benson as secretary of agriculture and at the same time submit to Congress a modified compensatory payment plan to farmers. This plan is the old Brannan plan in greatly revised form.

Among some Republican political circles the decision has now been reached that Mr. Benson is a political liability who will have to be sacrificed for the good of the party—particularly if the Republicans hope to retain their present seats in the House or to recapture control of that chamber.

The Republican House leadership, having reached the above decision, now contemplates the removal of Mr. Benson. He would be replaced by an outstanding Republican who can command the respect of both sides of the House. This new USDA boss might very probably be Clifford C. Hope, formerly House Agriculture Committee chairman, who would be expected to take to Congress a two-fold pro-

(Turn to BENSON, page 85)

SEE IT NOW

Feed men attending the Midwest Feed Production School this year in Kansas City will see actual demonstrations of feed mill operations under discussion. With the accent on the visual, handling equipment of various types will be set up and operating in simulated warehouse and handling situations, and custom milling and other operations will be demonstrated. The setting, including various types of equipment, for this year's school in November is shown in a sketch on page 8.

FEEDSTUFFS *Features This Week*

MILL DESIGN: Information and suggestions on feed mill design and production costs are presented by an engineer on **page 28.**

SELLING: An article on **page 70** tells how a California feed firm serves owners of large flocks.

ANIMAL BY-PRODUCTS: A summary of information on the use of animal by-products in feeds will be found on **page 66.**

THE FEEDER SPEAKS: On **page 10,** a leading producer tells what the swine producer wants from the feed man.

Worth Looking Into	22	Putting Research to Work	60
Up or Down	32	Joe Brooks	62
Convention Calendar	34	Feed Service Bulletin Board	74
Ringing the Cash Register	44	Classified Ads	82
Camera Views	56	Feed Markets in Detail	86

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A Significant Force

THE big crop production this year and the prospects of low grain prices are providing further evidence of the failure of the present farm program to solve the continuing farm problem. In general, agriculture continues to be out of balance with the rest of the economy.

No sound solutions are yet in sight. There is talk now of a production payment or compensatory payment plan under which farmers would be paid the difference between the free market price and the support rate on a commodity. This would apply to livestock and poultry as well as grains and other commodities, and it is not difficult to see the questions which this would raise for all of animal agriculture, including the feed industry.

Regardless of what government programs develop, it may be that the feed industry can be a major factor in bringing about a sounder agricultural economy over the long run. At least it would seem that the opportunity is there.

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IN these days of excessive poultry production and prospects for overproduction of hogs next year, it seems strange to talk about expanding livestock and poultry output. However, increased output, converting more grain to meat, milk and eggs, would certainly ease problems of crop surpluses. The increasing population and standard of living alone can help in that direction.

Feed men alert to their opportunities can do more and more to help their customers produce high quality products economically. Such help, along with cooperation in efforts to expand domestic and foreign markets, can go a long way in improving the market for livestock and poultry products.

Contract farming or variations of it and so-called integration are damned by many, but some of these programs and the basis for them suggest things which will have to be done to put agriculture in general on a sounder basis. In their service programs, feed men can help in the doing of many of these things, whether it is through contract programs or not.

We still have many thousands of farmers producing meat, milk and eggs without knowing their costs, and many of them are producing for an uncertain market, not knowing what they might expect in the way of returns. Agriculture is probably the last business in existence where such is the case, and until more farming units are put on a more business-like basis, not much change can be expected.

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IT is in this situation that the feed industry can play an increasingly important and helpful role. In some cases, it may take the form of contract or integration-type arrangements in new fields, with feed men involved in some way; in other cases it may not.

However, feed men can be very effective in helping farmers plan their production programs, in helping them to know what their costs are. Feed men, as they become more concerned with the feeders' end product and its quality, can help in bringing about more stable markets and more stable farm income, with more uniform production of a quality product that buyers and processors are eager to have. Multiple farrowing and meat-type hog production programs are just one example.

It is certainly over-simplifying things to say that the feed industry can be the basic force in bringing a more stable farm economy, but it is readily apparent that its role in animal agriculture will increase in importance. It is the natural course of events for basic producers and distributors of a product for a basic industry like agriculture.

It is impossible to see where current developments will lead. But there is a lot of thinking and study in the meantime. One sign of the times is the American Feed Manufacturers Assn. plans for employment of an economist and studies of the problems facing the feed and poultry and livestock industries. Another sign of the times is Iowa State College's new center for agricultural adjustment. It will do some fundamental work in efforts to determine how agriculture can adjust to its problems. From such programs, we will have new guides to the future.

Meanwhile, feed men, aggressively promoting the welfare of their customers, can be a very significant force in developing a sounder agriculture, and particularly a sounder animal agriculture.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Good pastures and ranges and forage remaining from harvested fields caused formula feed sales to suffer in many areas. Rains over wide areas of the country and mild weather contributed to good range conditions. Turkey feeds sold in small volume but there were indications that beef feeding rations were selling in better volume. Hog feeds moved well. Cotton, linseed and soybean meals, millfeeds and molasses weakened in price and feed prices dropped as much as $1 ton. The index of feedstuff prices declined .5 point to 73.6 this week compared with 78.2 a year earlier, and the feed grain index was up .5 point to 66.6 as against 73.4 a year ago. (Feed ingredient details on pages 86-88.)

Southwest

An improvement was noted in the formula feed demand late this week in the Southwest. Most mills reported a slow start but said that interest increased in the last day or two of the week. The trade was unable to advance any particular reason for the better buying, except as a reaction to previous several days of exceedingly sluggish business. Many felt that stocks of some dealers had become so low that they were forced into the market. Others felt that the higher grain prices this week might have induced some buying.

Cattle feed business showed a general improvement, although in mild degree, during most of the week. Seasonally cattle feed demand has been held back by open weather, good grass and abundant local grains in many areas, but cooler temperatures now are beginning to have an effect.

The movement of broiler feeds was fair, turkey volume is seasonally high and close to a peak, and many firms reported fairly good hog supplement orders this week.

Mill operations were about the same as in the preceding week but mills were in a more comfortable position with some surplus of orders on hand.

Formula feed prices showed a rather erratic trend and probably averaged about unchanged. Some price cards were up an average of 50¢, with the high protein feeds a bit lower than a week ago. Advancing grain prices was the principal strengthening factor, with big gains in milo prices particularly influential this week. Rains have delayed hard harvest movement and given the market some unexpected strength. Protein feeds were easier in undertone and lower in some cases.

In the Texas area, exceptionally good grass conditions have curtailed cube business sharply. In the absence of this seasonal lift, feed volume in the area was the lowest for this season in any recent year. Turkeys were moving to market in volume and broiler feed volume has been dropping, with poor prices discouraging new starts. One bright spot was a fairly good layer feed demand and this week also brought a little pick up in dairy feed interest.

Northwest

Turkey feed demand slowed down to only a trickle of orders for area mills. Birds have nearly all reached maturity and reports indicated that an average profit for a heavy bird is running about 60@80¢. Some very efficient turkey men with minimum mortality losses reportedly were netting about $1 a bird. All in all, the turkey season appeared to have ended with happier results for growers than was anticipated earlier this year.

Reports that orders were coming in for cattle feeder rations might indicate that feeder cattle are arriving somewhat earlier than the usual time. One mill spokesman said he expected his plant to have a sizable demand for steer feed in about two weeks, judging from his conversations with beef raisers who have shipments coming in.

The rain earlier this week helped formula feed sales and several mills reported that the entire week's business was very good. In one instance, the plant ran only four days, however. All plants reported that sales so far this month are exceeding those of a year ago.

Farmers were still very busy plowing, finishing up soybean harvesting and are about to begin the corn harvest. Considerable corn may be soft this year because drying weather did not set in early enough for proper drying. This would add to an already large feed corn supply.

A good feed sales week was anticipated next week by mills and one plant had a two-day order backlog this week.

Weakness in millfeed, linseed meal and soybean meal prompted price cuts in formula feeds which ranged up to $1 ton.

South Central

The formula feed business improved this week and running time easily filled five days. A few showers interrupted the soybean harvest long enough for the feeders to replenish their feed supplies.

Hog feeds continued to lead the list as being in most demand. Even though hog receipts at the stock yards continued to be heavy, no slackening in deliveries of feeds took place this week, and prospects for the next several weeks were bright.

Turkey feed deliveries were slackening as the birds are being moved to the processors. Steer feeds were beginning to be interesting to feeders and increased demand was expected over the next several weeks.

As a whole the egg feed business still was a disappointment. Present egg prices should be encouraging to the poultry operators, but they have not as yet increased their egg layer feed purchases.

Feed prices for the week were again slightly lower, in most instances less than $1 ton.

Pacific Northwest

Interest in supplemental feeding was restricted by good pastures and range conditions throughout the area as the result of mild weather conditions and beneficial rains of the past several weeks.

Feeders and mixers continued to limit purchases to mostly nearby requirements. Wheat millfeed and soybean meal listings were unchanged following the previous week's cuts while meat and bone meal quotes eased around $1.25 ton lower. Dull trading pushed copra and linseed meal prices $3 ton lower.

Formula feed sales were barely maintained at last week's levels. A seasonal decline in broiler and turkey feed movement was reported by most mixers.

There was a more limited demand for dairy feeds as the result of better pasture conditions throughout the region. Millfeed prices were around

(Turn to MARKETS, page 90)

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Renderers See Bright Future For Fats in Formula Feeds

By MARTIN E. NEWELL
Feedstuffs Staff

LOS ANGELES—A great future for fat and other animal by-product ingredients in formula feeds was envisioned by the rendering industry at the annual meeting of the National Renderers Assn. here Oct. 10-12. Spurred by the progress made in expanding sales in the feed and chemical industries in the past few years, directors of the association voted an increase of $20,000 in the research budget, bringing the total to $90,000 annually, and set their sights on a $150,000 goal for this purpose.

What scientific study has done for sales to the feed industry was indicated by figures quoted at the convention, which showed that the consumption of fat in feeds in 1953 was 33 million pounds; 1954, 115 million pounds; 1955, 135 million pounds, and in 1956, 225 million pounds. Estimates based on sales to the feed industry for the first nine months of 1957 suggest a figure of 310 million pounds for consumption this year. Convention speakers predicted that fat consumption in the feed industry could ultimately double the 1957 figure in reaching a total of around 600 million pounds.

One of the convention sessions, dealing with the future sales outlook for the rendering industry, gave much attention to the development of the feed market.

Fat in Cattle Feeds

Besides the use of high levels of added fat in broiler rations, John Haugh, Tucson (Ariz.) Tallow Co., reported on a variety of experiments with fat for other feed uses. In studies conducted at the University of Arizona, he said, cattle diets consisting of 65% roughage and 35% concentrate (which included 3½% tallow) produced a 21¢ per pound return to the feeder for every pound of tallow fed. He pointed out that the Arizona Flour Mills Co. has developed a cattle ration to be fed with cotton trash, which incorporates a substantial amount of fat in the concentrate.

The speaker mentioned also that fat has been used successfully in the treatment of bloat in cattle.

Mr. Haugh reported that his company has been making a blend of 40% fat with dehydrated alfalfa meal for cattle feeding and it has been thinking of marketing a product of this kind as an ingredient for feed manufacturers as well.

Mr. Haugh warned the industry that there are a lot of half truths and distorted information being circulated about fat in diets, not only in human diets but also in feed formulas. There is no truth to reports that high-fat feeds produce foods which are detrimentally high in fat, he said. He quoted experiments at the University of Arizona in which high levels of fat, up to 7.8%, were fed to groups of laying hens and the eggs analyzed for fat content. He said the hens on diets without added fat produced eggs that had a higher fat content than those on the high-fat diets.

NEW RENDERERS OFFICERS—Officers of the National Renderers Assn., reelected at the annual meeting in Los Angeles Oct. 10-12, left to right, are: Ralph Van Hoven, Van Hoven Co., Inc., St. Paul, Minn., first vice president; Richard B. Mortimer, Peterson Manufacturing Co., Los Angeles, president; Jamie C. Fox, Chicago, secretary-treasurer; Martin J. Rubin, H. M. Rubin Co., Inc., Long Island City, second vice president; John J. Hamel, Jr., Valley Chemical Co., Mt. Pleasant, Mich., executive director.

The speakers also mentioned the great potential for fats in various chemical industries. Among others, he mentioned the development of fatty acids which could replace emulsified petroleum bases for insecticides and which would have none of the undesirable properties of the petroleum products. He also said that a uranium 235 salt of a fatty acid had been discovered which had potential uses in controlling atomic reactions and might find a great market in this field some day.

Two-Point Program

Ralph Van Hoven of the Van Hoven Co., St. Paul, said he felt greatly encouraged as to the future of outlets in the feed industry for meat meal and poultry by-product and feather meal. He stressed a two point program for every renderer: "Know your product and know your customer." A high quality product is essential in building sales to the feed industry, he said, and it also is essential in building confidence and a sound sales program for the renderer too.

Mr. Van Hoven pointed out that the association has done and can do certain things to promote the sale of the industry products. For example, in collaboration with the feed industry, buying grades have been set up for meat meal and animal fat. Also the association has produced a feed value chart for feed formulators which makes an effective sales tool for the renderer. It will be available shortly from the association office, he said.

But just as important, if not more so, than anything the association can do is the individual sales work which must be done by the renderer himself. Personal point of sale contact is most important, Mr. Van Hoven said, and the individual renderer is the only one who can furnish it. The speaker urged renderers to join area feed groups in their own communities and get to know the people they want to sell.

Myer O. Sigal, Bernd Co., Macon, Ga., acted as moderator of this panel presentation and with John J. Hamel, Jr., Valley Chemical Co., Mt. Pleasant, Mich., conducted a series of microphone interviews and comments from individual renderers in the audience.

A large share of the program was devoted to discussion of research and automation in the rendering industry.

Among those who talked on the former topic were Gerald L. Scott, mechanical engineering section, Midwest Research Institute, Kansas City, and a visitor, Andre Van Hourenbeek, LaHaye, Schotin, Belgium, who described some of the methods used in his plant.

F. B. Ortman, associate director for Southern California, Stanford Research Institute, said that management's decision is not whether to do research, but how much research the company needs and can afford. Long range planning must go hand in hand with the research and development programs, he said, as neither can stand alone without the other.

"No research project should be undertaken until a goal has been established and a long range plan developed into which successful accomplishment of this goal will fit," Mr. Ortman said. "This means that before a research project is undertaken, management should be assured it will be able to finance the successful completion of this project when it is ready to be produced. It is surprising how frequently management overlooks this important point. Many companies today have on their shelves the results of many such successfully completed research projects which remain inactive and produce no benefits because no provision was made for financing production."

Mr. Ortman commended the ren-

(Turn to RENDERERS, page 89)

Protein Oil Meal Futures Close Mixed

MEMPHIS—Protein oil meal futures prices were mixed at the close Oct. 16 on the Memphis Board of Trade, compared with Oct. 9.

Continuance of interest in Eastern Trunk Line soybean oil meal featured the early part of the period. Later, however, there was a standoff between buyers and sellers, awaiting new incentives.

Some improvement was noted in cottonseed oil meal during the week.

Unrestricted soybean oil meal closed 35¢ lower to 25¢ a ton higher, Eastern Trunk Line soybean oil meal 25¢ to 50¢ lower, bulk solvent cottonseed oil meal 25¢ lower to $1 higher, and sacked old process cottonseed oil meal unchanged to $1 higher.

Trading volume amounted to 2,900 tons of unrestricted soybean oil meal, 11,300 tons of Eastern Trunk Line soybean oil meal, 3,200 tons of bulk solvent cottonseed oil meal, and 700 tons of sacked old process cottonseed oil meal.

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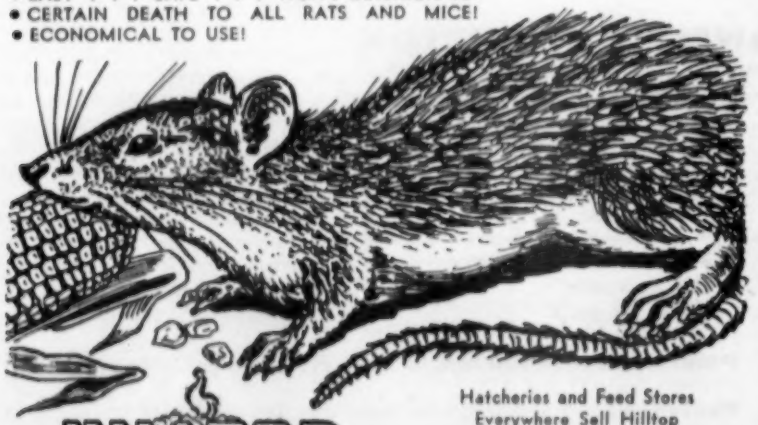
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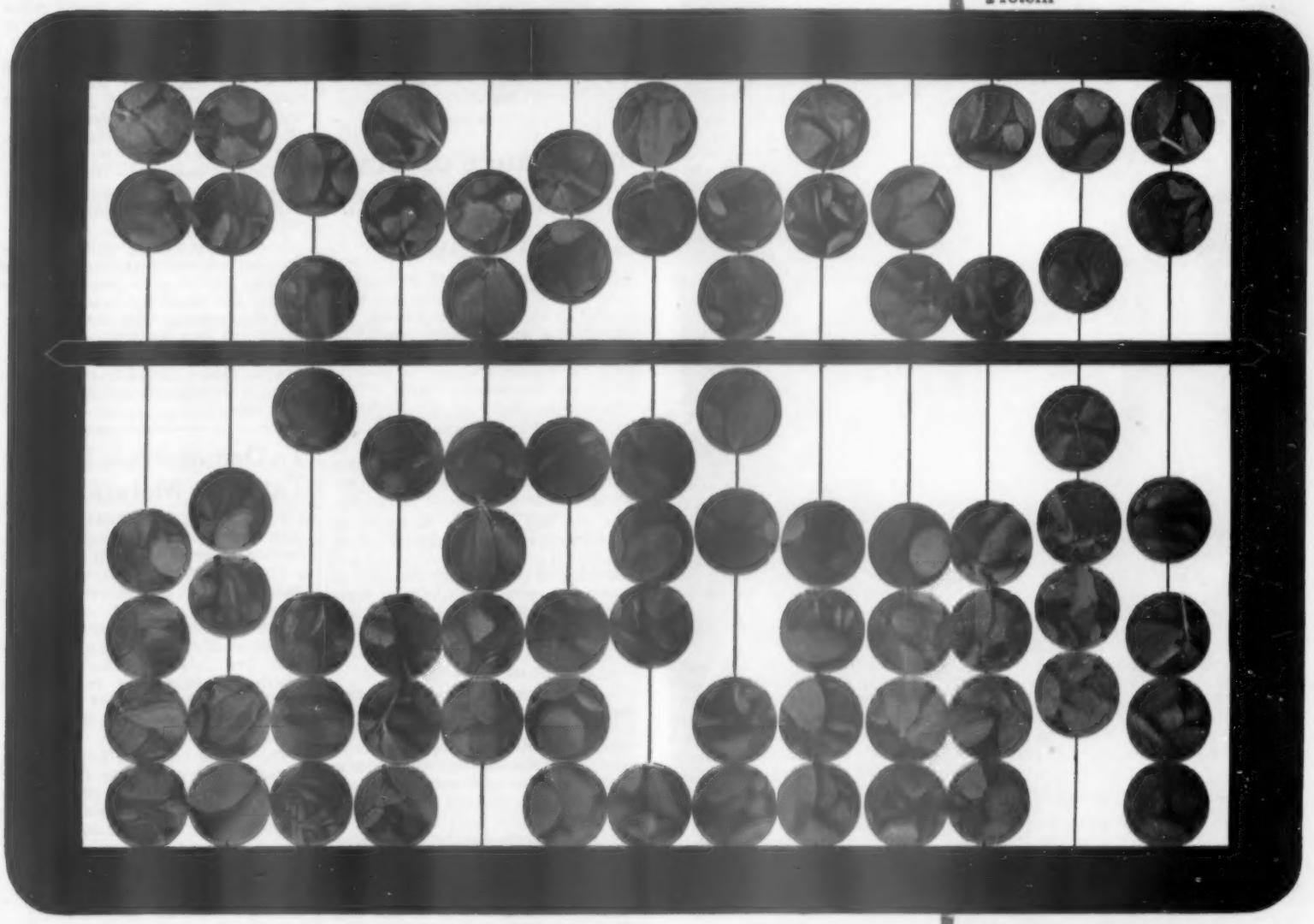

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Problems with Cage Layers Discussed at NEPPCO Event

HARRISBURG, PA.—Certain nutrition and disease problems in connection with keeping of layers in cages were discussed by one of the speakers at the recent annual meeting of the Northeastern Poultry Producers Council.

The meeting was held here in connection with NEPPCO's 20th annual exposition. Some 5,000 persons from 14 states were at the exposition to see the large accumulation of poultry supplies and equipment and hear talks on various aspects of poultry production and marketing.

Speaking on nutrition and disease hazards in cages was Dr. Hans Fisher of Rutgers University.

Cage Fatigue

One of the problems is cage fatigue. Dr. Fisher said that only a very small percentage of cage birds is usually afflicted. Birds usually recover completely after a two- to four-week period during which feed consumption varies from complete inanition at the onset, with resumption of normal consumption after a week or 10 days.

"Many research workers have indicated the lack of beneficial effects due to extra vitamin D or various mineral supplements," Dr. Fisher said. "In our own laboratory rather good results have been obtained in preventing cage fatigue by increasing the amount of calcium in the diet to 2.5%. Dr. Allcroft, a British scientist, has an apparently plausible suggestion that cage fatigue might be due to improper balance between calcium and phosphorus in laying rations.

"It has been pointed out to me that cage fatigue has never been observed in a large cage operation in a research institution where the same practice of separately supplying oyster shells is maintained. It would appear very much worthwhile to investigate this point further."

A second problem with caged birds, said Dr. Fisher, is the rapid onset of bluecomb disease whenever new birds are transferred into cages. These outbreaks occur about 10 days after the birds have been brought into the cage house and in all instances birds in close proximity are afflicted. Most afflicted birds will die. Apparently no one is presently working on this condition, which has not been completely studied, Dr. Fisher said.

Fatty Liver Syndrome

"A third special cage problem is the so-called fatty liver syndrome," Dr. Fisher continued. "This condition also appears in birds maintained on the floor where the rations were high in energy and contained large amounts of animal fat.

"Particularly striking is the accumulation of fat around the kidney, which in our experience has been more specific than any of the other symptoms. Reports indicate that birds thus afflicted will often die due to heart failure or liver hemorrhages.

"On the basis of several years work involving the use of various types of fat, it appears to us that this condition is hastened if not brought on by animal fat in the hen ration.

"In the experience of every scientist who has worked on this problem of animal fat in feed, no advantage in terms of increased egg production has been noted after such addition of fats. The only advantage that has been occasionally attributed to added fat has been an improved feed utilization during the cold winter months. For every report of such beneficial effects, there have been an equal number of reports noting no improvement due to the added fat. Since the energy requirements of the cage layers are in any case lower than those of birds maintained under floor conditions due to the restricted movement and since it is not very difficult to formulate a high energy diet without the use of supplemental fat, it would appear unnecessary and in certain instances definitely undesirable to add animal fat to cage rations."

The Chicken's Taste

A talk on "Catering to the Chicken's Taste" was presented by Dr. Morley Kare of Cornell University. He noted that Cornell has been studying taste and other senses in domestic and other animals for the past three years. The most important contribution in these studies, he said, has been development of accurate methods for measuring the response of animals to a flavor.

That a chicken has a sense of taste is beyond argument, Dr. Kare said, although the interpretation of flavors by the fowl appears to be different from that in man.

Dr. Kare summarized some of the research findings as follows:

"**Salt poisoning:** It is highly improbable that salt poisoning of chickens will occur where salt free water is available. This follows since the chickens have an unusual ability to tolerate salt, and secondly they find salt, in levels that might be harmful, very offensive.

"**Feed flavors:** Feed can be made objectionable or more appealing to the chickens by the addition of flavors. However, the initial question is whether there is any advantage in

(Turn to NEPPCO, page 90)

ADVERTISEMENT

Thorin Bros.

STOP SHIPPING FEVER—Thorin Bros., of Hills, Minn., report that this year, for the first time in their 20 years of feeding cattle, they had "no trouble with Shipping Fever." The reason, say the Minnesota cattlemen, is that calves were started on a 500-gram Terramycin feed for five days after arrival in feedlot. "We're convinced that if calves get high level pellets right away, it will prevent trouble in the lot." These calves were finished out on a regular feedlot supplement fortified with 75 grams Terramycin. "We think the cattle got to market sooner," the Thorins said. "Heifers sold good and buyers at the yards said they had a good shine on them."

Chicago Club Elects Robert H. Griffiths

CHICAGO—Robert H. Griffiths, Allied Mills, Inc., Chicago, is the new president of the Chicago Feed Club. He was elected at a dinner meeting of the organization at the Saddle & Sirloin Club, Union Stock Yards, Oct. 11.

Other new officers are: John Mecking, J-M Trading Corp., vice president; Rex E. Yocum, Seedburo Equipment Co., treasurer; and Gerald A. Karstens, Feed Age, secretary.

New directors are Lee E. Gray, General Foods Corp., Gaines Division, Kankakee, Ill., and Henry L. Stewart, New Century Co., Chicago. The new executive group will take office at the January meeting of the club.

As dinner guests, the club had Rex Allen, western star of stage, screen, records and television, and two cowgirls from the World Championship Rodeo which was appearing at the International Dairy Show nearby. The girls, Miss Nancy Sheppard, Globe, Ariz., and Miss Jerry Portwood, Arlington, Texas, later performed as trick riders in the rodeo, to which the club adjourned after a brief business meeting.

Importance of Zinc, Potassium in Poult Rations Shown

COLLEGE PARK, MD. — Feeding tests with turkey poults at the University of Maryland are showing the importance of adequate levels of potassium and zinc in the ration, at least in the early stages of growth, university researchers report.

In several tests, control birds got purified type basal rations containing commonly recommended levels of zinc and potassium, and other birds got zinc and potassium above the levels commonly believed adequate.

In one test involving 31 poults on the control ration and 53 poults on the ration with added zinc and potassium, the difference in rate of gain was about 59%. Other tests show a similar response to zinc and potassium at "higher than adequate" levels.

Effect on Hock Trouble

Another thing demonstrated—perhaps even more spectacular than the growth rate—is the relationship between zinc deficiency and swollen hocks and poor feathering noted in these tests, the university said.

Dr. William Supplee, who is conducting the tests, says about 60% of the poults on the control ration have had hock trouble—many of them severe cases. Less than 6% of the poults getting added zinc and potassium have had hock trouble, and they were only mild cases.

Zinc alone prevents hock trouble and poor feathering, but has given little growth increase in these tests. Potassium alone has no apparent effect on hock trouble or feathering, but when combined with zinc has given good growth response.

So far as is known, this is the first demonstration that zinc is related to hock trouble and feather development. The tests also demonstrate that for rapid early growth, poults need more potassium and zinc in the rations than was formerly suspected.

The ingredients of practical rations contain considerable quantities of potassium and small amounts of zinc, Dr. Supplee said, so it has not been considered necessary to give any attention to these two elements when formulating practical rations for poultry.

Whether or not additions of potassium and zinc will actually improve growth on practical type rations will have to be determined by further experiments. Such tests are currently being carried out.

Millfeed Prices Reach Post-War Record Low Level

By EMMET J. HOFFMAN
Feedstuffs Staff

MINNEAPOLIS—Post-war record low prices and slow trading marked the wheat millfeed market situation this week, continuing a trend which has been underway for several months.

On Oct. 16 bulk middlings were available in Minneapolis for $25 ton. and not too many buyers were reported as being interested. The $25 price is called the record low since World War II or earlier, and is in contrast with the $60 per ton quotations posted in some of the years immediately following the end of the war.

Wheat millfeeds averaged $2.60 ton lower last week at Kansas City, and prices dropped to the lowest point since 1941, the U.S. Department of Agriculture reported.

Market spokesmen say that two factors are responsible for the comparatively low millfeed prices: (1) Not as much wheat millfeed is being used in feeds, millfeeds having given way to higher energy ingredients, and (2) the U.S. is well stocked with feed grain supplies and more are on the way with large corn and grain sorghum crops in prospect.

Some market men, while wary in their outlook, feel that the prices may recover $2-3 ton in the next few months but would not predict this as anything certain. One observer said he did not look for the usual spring demand to be as great as normal, indicating that a slowed-up millfeed demand is in prospect at least for the time being.

To Demonstrate Rubber Tank for Molasses

FORT WORTH, TEXAS—A demonstration of molasses hauling in collapsible rubber tanks will take place at the Fort Worth Grain Exchange, 28th & Decatur, Fort Worth, at 2 p.m. Oct. 23.

The U.S. Rubber Co. is furnishing a typical 30-ft. sealed tank of this type. The J. Paul Smith Co., Fort Worth, is furnishing a tractor, and the Hobbs Mfg. Co., Fort Worth, is furnishing a new flat-bed 32-ft. trailer for the demonstration.

The rubber tank can be filled with molasses and carried in the bed of the grain truck. When empty, the tank is collapsed, and grain can be carried in the usual manner.

Enid-Wichita Rate Differential Retained

WASHINGTON — The Interstate Commerce Commission has announced an increase in rail freight rates on grain moving from the Enid, Okla., and Wichita, Kansas, terminals to points in southeastern U.S.

The commission retained a differential which gives Enid a rate advantage over Wichita.

In a case between the Santa Fe Railroad and the Kansas Corporation Commission the ICC in effect raised the Wichita rate from 63 to 71¢ per 100 lb., and the Enid rate from 58¢ to 66.5¢ per 100 lb.

This is on grain that moves through Memphis to such southeastern points as Atlanta.

The ICC action was an affirmation of a 1953 ruling which was upset by a three-judge federal court in Kansas, which ordered further ICC study.

Although Enid and Wichita are about the same distance from Memphis, the commission said Enid is related to the deep Southwest while Wichita is in the central grain states.

Alfalfa Plant in Arkansas Planned

KANSAS CITY—The National Alfalfa Dehydrating & Milling Co. has announced plans to build a $100,000 dehydrated alfalfa production plant near Clarkedale, Ark., not far from its new inert gas storage facility on Presidents Island, Memphis.

Production will begin with the harvesting of the first alfalfa crop next spring, according to A. R. McFadden, National vice president.

The Clarkedale plant will be built on three acres south of Clarkedale. It will be served by both railroad and truck transportation for movement of the dehydrated alfalfa pellets to Memphis for storage and blending.

The installation of this plant in a formerly all-cotton growing area has been hailed by local farm leaders as a real asset to the area. An estimated $100,000 in added income to the area is expected. About 1,000 acres of alfalfa will be planted.

The new plant will be one of nearly 100 dehydrating units operated by National throughout the U.S., Mr. McFadden said.

Club Hears Talk on Advances in Science

CINCINNATI — With Russia's "Sputnik" flying overhead, private industry and government funds will have to be expended increasingly to maintain this country's position of world leadership, members of the Cincinnati Feed Club were told at a monthly dinner meeting Oct. 14 in Shuller's Wigwam.

The speaker was Frederick H. Ames, Jr., General Electric Co., who also discussed the numerous advances in agriculture and industry that will become possible with further development of atomic energy.

The talk was followed by a lively round-table discussion, with Mr. Ames answering numerous questions relative to applications of atomic energy in agriculture and production of animal feeds.

During a business session, it was decided to stage a membership drive, to be conducted by the membership committee, composed of Roland C. Lindsey, National Molasses Co., and Robert L. Kemper, the Early & Daniel Co., with the assistance of all present members. John F. Young, club chairman, presided at the meeting, which was attended by 34 members and guests.

Fire Destroys Elevator

ODESSA, MO.—Fire destroyed the Missouri Farmers Assn. grain elevator here recently. Damages were set at $30,000. A county landmark, the frame building went up in 1879. It has been operated by the MFA for the past 30 years. The cause of the blaze was not determined.

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Byron R. Gustafson

GMI Feed Division Names Credit Chief

MINNEAPOLIS—Byron R. Gustafson has been appointed to the newly-created position of credit manager for the Feed Division of General Mills, Inc., D. H. McVey, general manager, has announced.

Heretofore, credit matters were a part of the division comptroller's responsibility. Because of changes within the feed industry, it was decided to separate credit from the accounting function and establish the former as a specialized department.

Mr. Gustafson is a 20-year man with General Mills, with a wide background of experience in accounting, purchasing and feed sales. Before moving to Minneapolis in 1954, he served as Milwaukee district sales manager for the division.

B. F. Reinking will continue to serve as division comptroller and will also assist the new credit manager in an advisory capacity.

Arkansas to Dedicate Poultry Test Buildings

FAYETTEVILLE, ARK.—A dedication of two buildings used for a random sample poultry testing program at the University of Arkansas Agricultural Experiment Station will be part of a special Poultry Study Day to be held at the station on Oct. 25-26.

The buildings—a brooder house for growing broilers to eight weeks, and a hen house for housing pullets in production for 240 days—were built by the Arkansas Poultry Improvement Assn. at the experiment station.

Purpose of the random sample poultry tests is to measure differences between strains and strain-crosses of birds grown on the same feed, in the same house and under the same management. In this way breeders can determine which characteristics in their stock need most improvement.

Arkansas was the first station to institute a complete random sample testing system, in that both layers and broilers are tested for performance.

Tests are supervised by personnel of the department of animal industry and veterinary science at the University of Arkansas. Any breeder or hatcheryman in the U.S. who is a participant in the National Poultry Improvement Plan is eligible to submit entries.

Iowa Portable Mill Official Dies at 53

OELWEIN, IOWA—George Lonien, 53, co-owner of the Iowa Portable Mill Co. here, died recently following a heart attack. He had been associated with the mill company since 1941.

Surviving are his widow, a son, a daughter, two brothers and a sister.

Stilbestrol May Be Fed to Fattening Sheep and Lambs, Lilly Announces

INDIANAPOLIS — Diethylstilbestrol, the hormone-like substance used in stimulating gains in cattle, may now be fed to sheep.

Eli Lilly & Co. this week announced that it has been given the "go-ahead" signal to market "Stilbosol" (Diethylstilbestrol Premix, Lilly) for sheep.

In reported feeding tests, Lilly said, feeding stilbestrol to sheep has increased gains an average of 25% and reduced feed required per pound of gain by an average of 15%. Agricultural colleges in Iowa, Kansas, Minnesota, North and South Dakota and Utah have reported on feeding stilbestrol to sheep.

Feeding stilbestrol to cattle was first permitted by the Food and Drug Administration in 1954. At that time, Lilly announced that it had received an exclusive license from the Iowa State College Research Foundation to market the premix "Stilbosol." An estimated 80% of all cattle on feed are now being fed the hormone product, the company said.

For Fattening Animals

G. L. Varnes, executive director of the Lilly agricultural and industrial products division, said that the growth stimulant may be fed to all fattening sheep and lambs but not to breeding stock. Stilbestrol is to be fed to sheep at a rate of 2 milligrams per head daily.

"No residue of the growth stimulant can be found in the meat of sheep to which it is fed," Mr. Varnes said. "This has been shown by tests accurate enough to pick up only 2 parts of the chemical per billion parts of sample."

Mr. Varnes said that "Stilbosol" for sheep will be handled in the same

(Turn to STILBESTROL, page 90)

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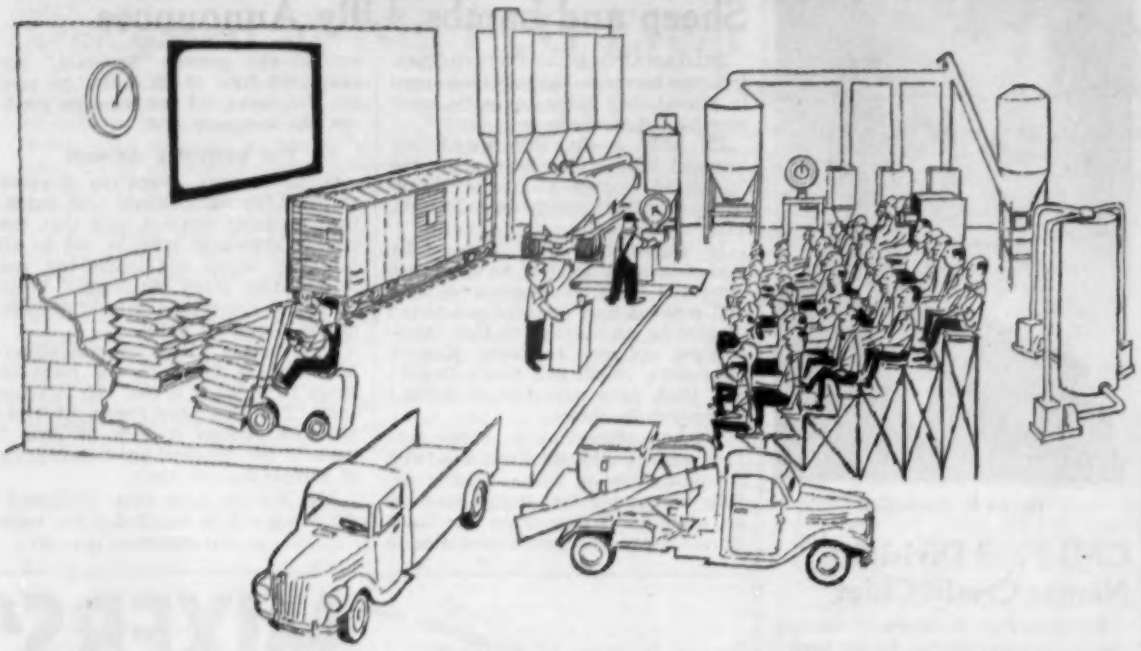
Production School to Show How It's Done



The accent will be on the visual at the 1957 Midwest Feed Production School in Kansas City Nov. 20-22. The sessions, unlike any of the past schools, will be built around actual demonstrations to a considerable extent.

In the sketch above, Artist Jack O'Hara has visualized the setting of the production school sessions this year in the exhibition hall of the Kansas City auditorium. Like a medical amphitheater, the students will look down on a stage in which various operations will be performed as they are discussed by the speaker.

Since the research project on which the school will concentrate this year involves materials handling, with particular emphasis on warehouse operations, the stage will show a simulated warehouse situation, in the left corner, and a box car set up on the right. Room will be provided for typical operating procedures in handling material coming through a sacking scale at the right hand corner of a bulk bin, also located at the right of the stage.

Other provisions are made for discussion of working with trucks, both the flat-bed type for handling sacked feeds and the bulk trucks, as well, the latter located beside a complete bulk handling set-up at the far right corner. Along the right of the bleachers is a scale and sacking line in which various pieces of equipment will be displayed for handling different problems and situations in that department.

Other Centers

Two other special equipment centers will also be operated during the school sessions. They are liquids handling center, pictured above behind the student seating facilities, and a custom milling center, where various types of equipment will be discussed. This is represented symbolically in the drawing by the presence of the mobile feed mixer in the forefront, although this center actually will be located on the other side of the stage.

Many of the discussions on the warehousing phase of handling will require the time clock shown above stage in the sketch, and there will be frequent resort to the screen for movies and slides.

The studies this year will involve full scale equipment in operation. Many firms are furnishing machinery for this purpose, including the following and some others for which arrangements have not yet been fully completed:

Butler Mfg. Co., Kansas City; Universal Hoist & Mfg. Co., Cedar Falls, Iowa; Dodgen Associated Manufacturers, Inc., Sioux City, Iowa; Union Bag-Camp Paper Corp., New York; Burrows Equipment Co., Evanston, Ill.; The Fuller Co., Catasauqua, Pa.; Jacobson Machine Works, Minneapolis; International Paper Co., New York; Thayer Scale & Engineering Corp., Pembroke, Mass.; Sprout, Waldron & Co., Inc., Muncy, Pa.; Bemis Bro. Bag Co., Minneapolis; Richardson Scale Co., La Grange, Ill.; Wenger Mixer Mfg. Co., Sabetha, Kansas; Reliance Equipment Co., Kansas City; Economy Equipment Co., Kansas City; Strong-Scott Mfg. Co., Minneapolis; Prater Pulverizer Co., Chicago; Power Curve Conveyor Corp., Denver; Columbian Steel Tank Co., Kansas City; Barnard & Leas Mfg. Co., Cedar Rapids, Iowa; Omega Machine Co., Providence, R. I.; Champion Portable Mill Co., Minneapolis; Daffin Mfg. Co., Lancaster, Pa.; Clark Equipment Co., Battle Creek, Mich.; Yale & Townes Mfg. Co., Philadelphia; Lewis-Shepard Products, Inc., Watertown, Mass.

Supervision and engineering of the installation of this equipment in the auditorium are in charge of Edward Brackney, John Heimovics and Colonel Clardy of the Jones-Hettelsater Construction Co., Kansas City. Since the Kansas City auditorium is a popular convention spot, the equipment must move in and out in a hurry, requiring careful planning and good timing all along the line.

Two special research studies will be presented at the school this year. One, financed by the Midwest Feed Manufacturers Assn., is a detailed study of warehousing problems and their solution by Richard Muther & Associates, Kansas City research organization. The other, financed by the U.S. Department of Agriculture, will be a preliminary report on a study of custom mill operating costs, which will be reported by Frank Ross, of the Midwest Research Institute, Kansas City.

There will be special discussions of the technique of work sampling for mill superintendents who want to conduct time studies in their plants, as well as sessions on handling liquids, loading, scaling and custom milling.

Advance Registration Required

Registrations are still being received for the 1957 sessions, Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., reports. More than 400 have already been registered, he said.

Mr. Larson pointed out that all production school registrations must be made in advance, since facilities are limited and the type of program involved requires advance knowledge of the number participating.

Registrations also include arrangements for hotel accommodations, he said.

Fish Meal and Scrap Production Declines

WASHINGTON — During July, 1957, a total of 54,021 tons of fish meal and scrap was manufactured in the U.S. and Canada, a decrease of 1,588 tons from the same month a year earlier, according to the U.S. Department of the Interior.

Imports of fish meal into the U.S. during June, 1957, totaled 8,319 tons compared with 8,559 tons imported during June, 1956.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
August 10	1,013	559	837	1,018	156	661	1,783	1,396
August 17	978	570	847	867	178	577	1,780	1,446
August 24	981	539	815	843	181	575	1,669	1,502
August 31	1,007	503	739	839	131	530	1,589	1,620
September 7	939	598	773	866	189	421	1,754	1,420
September 14	881	554	666	775	187	416	1,772	1,543
September 21	777	494	587	762	113	411	1,846	1,471
September 28	903	506	634	723	100	458	1,709	1,637
October 5	863	535	737	770	164	513	1,740	1,503
October 12	874	535	546	744	144	425	1,627	1,398

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
August 10	1,309	564	2,205	308	5,408	193	2,119	1,314
August 17	1,324	575	1,978	320	5,211	211	2,175	1,346
August 24	1,230	514	1,979	317	5,272	226	2,068	1,292
August 31	1,271	524	1,939	296	5,088	229	1,911	1,284
September 7	1,252	495	2,087	277	4,995	236	2,053	1,214
September 14	1,218	516	2,063	302	5,013	206	1,921	1,283
September 21	1,185	470	1,977	350	4,832	255	1,884	1,258
September 28	1,176	433	1,977	288	4,875	206	1,883	1,267
October 5	1,176	488	2,059	286	4,838	228	2,001	1,323
October 12	1,105	442	2,068	344	4,826	182	1,978	1,315

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1957	Total 22 areas 1956
August 10	2,273	339	1,792	239	127	826	26,409	24,553
August 17	2,044	308	1,888	262	162	916	25,950	24,380
August 24	2,009	376	1,827	271	137	894	25,517	24,429
August 31	1,972	339	1,805	216	107	919	24,858	23,718
September 7	1,978	416	1,874	220	113	836	25,006	22,279
September 14	2,062	379	1,835	218	118	945	24,873	21,932
September 21	2,019	402	1,877	178	120	932	24,200	22,013
September 28	2,007	340	1,836	193	94	747	23,992	22,364
October 5	1,899	378	1,828	179	87	965	24,560	22,043
October 12	1,922	392	1,962	176	134	963	24,102	21,830

Soy Prices May Bottom Out Near Present Levels

MINNEAPOLIS—Soybean oil meal prices should bottom out at or near present levels and then advance after the soybean movement is ended. A market dip might occur within the next two or three weeks if the tail end of the soybean harvest produces undue market pressure resulting from insufficient storage. After that, there may be a maximum 10% increase in meal prices from current levels.

These are the predictions of Fred H. Hafner, director of soybean oil meal sales for the soybean division of General Mills, Inc., in his latest market letter on the over-all soybean situation.

"To summarize the situation," he says, "this looks like a pretty good time to buy, as there's little room left on the downslide."

Mr. Hafner's predictions on soybean futures prices (nearest option): "They should trade in a narrow range from $2.25 to $2.35 bu. due to influence of heavy stocks of soybeans in Chicago, where many were barged or trucked in at less than the rail rate."

"Soybean oil prices," he says, "should move upward in direct proportion to volume of Public Law 480 allocations. However, PL 480 funds set aside this year for soybean oil are far less than those available last year ($126 million for fats and oils last year vs. $90 million this year). Therefore, don't look for a large price advance even when PL 480 allocations do materialize."

Reviewing the soybean crop picture, Mr. Hafner observes that the 1957 crop exceeds the 1956 estimate by over 30 million bushels. American growers produced the largest crop in history this year by coming up with close to a half billion bushels of soybeans. This is in contrast to a

(Turn to SOYBEAN, page 55)

National Alfalfa Builds Inert Gas Storage

PLAINVIEW, TEXAS—A new inert gas storage facility is being built by National Alfalfa Dehydrating & Milling Co. at the company's dehydrating plant here. Steel tanks will be erected with capacity for 8,000 tons of dehydrated alfalfa pellets.

The installation will store pellets from 15 National dehydrating units in the Texas, Oklahoma and New Mexico region, the inert gas preserving the vitamin A content. Rail and truck transportation is available to the plant.

Henry A. Hofmann, National Alfalfa president, Lamar, Colo., said that the plant is part of the company's over-all expansion program. He said it would provide capacity for approximately 350,000 bu. in the rapidly growing southwestern part of the country. Construction is expected to be completed in time to store at least some of the current season's alfalfa crop.

"This installation has long been needed in this area," said A. R. McFadden, National vice president, Kansas City, "to provide high quality dehydrated alfalfa for the large broiler growing section near here. The need for this high quality material is especially acute this year because most broiler rations will be made up with milo instead of corn. Since the xanthophyll content of milo is very low, broilers eating the feed will lack the yellow color considered desirable unless another source of pigmentation, like alfalfa, is used."

National Alfalfa operates other gas storage facilities at Garden City and Lawrence, Kansas, Lexington and Omaha, Neb., Toledo, Ohio, and Memphis, Tenn. Total capacity at these storage points is 110,000 tons.

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Voice of the Feeder

What the Swine Producer Wants from the Feed Man

By Bernard Collins

As I am representing swine producers in this discussion, I asked a number of farmers in Iowa what they expected of our college and of the feed industry. Frankly, I was rather surprised at their spontaneous answers. They knew what they wanted and expected, and it didn't take them long to state it. Many of the answers ran along the same line, so what I say here will be a cross-section of the thinking of Iowa farmers.

If I offer criticism, I will try to keep it of a constructive nature, as I realize that criticism, in itself, is of no help.

As we look at the over-all picture of swine production, it appears to be made up of a number of different segments, all of which have an obligation to the other segments and to the industry as a whole.

I would break these segments down thusly:

1. The producers—both purebred and commercial.
2. The feed industry.
3. The packers and processors.
4. Wholesalers and retailers.
5. The college experiment stations, who are involved in all segments.
6. Last, and most often forgotten, but equally important, the consumer.

Each of the segments of the industry is dependent to quite some extent on the other segments, and by being dependent, is by the same token, obligated to the other segments to make a success of the industry as a whole.

The evolution of swine feeds and feeding methods taking place in the past 10 years has necessarily placed more emphasis on the feed manufacturers' responsibilities to the entire industry than ever before in history.

Too often, I'm afraid, we are prone to blame all the bad parts of the industry on the other fellows and not shoulder our own personal share of responsibility. This goes for producers right on down the line to retailers.

No. 1 Problem

It is generally recognized that the No. 1 problem of the swine industry is an end product that is too fat and is lacking in the uniform quality which appeals to Mrs. America of 1957.

One has but to look at the per capita consumption increase of competitive meats of from 40 to 100%, while pork is dragging its heels with but a 6% increase, to get the feeling that something has gone wrong with the industry. Or to see that where the consumer spent 3.1% of her disposable income in 1947 for pork, and in 1956 spent only 1.7% for our product, is enough to make one sit up and take notice.

The answer isn't that our product has degenerated in 15 years. The truth is that the consumer's eating and living habits have changed. Some competitive meats have kept pace with the change, but we in the swine industry have been slow to change—and change we must.

The consumer doesn't need the fats for warmth and energy that he has needed in the past, due to a higher standard of living. Every woman with a market basket is conscious of her figure. If she doesn't watch it, no one else will. She shies away from fatty foods. Hence, there has been a decline in the consumption of our product.

Each and every segment of this swine industry is interested in volume of business at a profit. To increase this volume, we all have to work together towards producing a product that will sell and sell more.

You of the feed industry need to be just as interested in the end product that your feed goes into as the producer, packer or retailer.

Each ton of your feed that goes into the over-fat, cob-rolling, lard bucket is a detriment to your future business and to the future of the industry. A satisfied customer of a pork chop is a repeat customer. A dissatisfied customer is a lost customer and less volume of future business.

You have salesmen beating the bushes in every section of the country. Let's see to it that these men are selling the future of the hog business as well as feed. You, as companies, need to educate your salesmen so that they can sell their future.

May I say here that I'm talking about meat hogs—not the meatless wonders that a few companies are pushing. The swine testing and evaluation stations combined with purebred progeny testing have done more for meat hog production in a few years than 20 years of trying to establish new breeds.

Advertising

Having been exposed to commercial feed advertising, I'm sure that no feed company is suffering from an inferiority complex or even from being inferior.

I do feel that feed companies have a terrific responsibility in carefully screening the type of copy they use. Advertising used by feed companies was criticized by nearly 100% of those farmers I questioned. Many of them referred to the cost of gain figures used by some companies in 1955-56, showing gains for 6 to 7¢

EDITOR'S NOTE: The recent Iowa Nutrition Conference included talks by feeders who offered advice and suggestions to feed manufacturers and dealers. Representing swine producers was Bernard Collins of Clarion, one of the leading hog producers in the leading hog state of Iowa.

What Mr. Collins had to say provides some food for thought for feed men, whether they agree with all of it or not. A principal recommendation was to get behind efforts to encourage farmers to turn out the meat-type hogs that are regarded as vital to survival of the swine industry. Other suggestions also deserve consideration. A major complaint voiced by Mr. Collins was aimed at what farmers feel are unreasonable advertising claims. Excessive claims, feed men recognize, can damage the standing of the entire industry. Another point of interest was in suggestions that feeds be "simplified" so that the farmer can utilize his grain at home, that "premixes" be available for mixing on the farm with the farmer's own farm-grown and ground grains.

Many feed men probably would take issue with some of the proposals. One was a suggestion of an industry advisory committee to "police" the feed industry and put a "seal of approval" on feeds meeting certain standards—something that probably would be unworkable and involve complications and controls that would hurt both farmers and the feed industry.

Mr. Collins also called for more research on producing a quality product and selling it, and less research on increasing production or making it more efficient. This is an understandable attitude, but perhaps a dangerous one. There's no product that doesn't have a substitute. And, while there's a problem of periodic surpluses that hasn't been overcome, it would be almost suicidal for the swine industry to sit back and watch other meat producers become still more efficient and take still more of the consumer market at the expense of pork.

While certain suggestions might be questioned, the accompanying article—from Mr. Collins' talk—merits reading as another indication of producers' thinking on how the feed industry should serve them.

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Sales and Advertising Director
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H. G. Bos

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American Cyanamid Co. (Malathion)
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W. R. Ames Company
Anchor Serum Company
Armour and Company (Dynafac)
Ben Hur Manufacturing Company
Cargill, Inc. (Nutrena Feeds)
Chilean Nitrate Educational Bureau, Inc.
Clinton Machine Company
Coker's Pedigreed Seed Company
Continental Motors Corporation
Craft Cooler Corporation
DeWitt's Turkey Hatchery, Inc.
E. I. DuPont de Nemours & Co. (Remington Arms)
Firestone Tire and Rubber Company
Flint and Walling Manufacturing Company, Inc.
State of Florida
Ford Motor Company (Trucks)
General Electric Company (Refrigerators)
Hahn, Inc.
Hess & Clark, Inc. (Feed Products) & (Animal Health)
Hotpoint Company
Kalamazoo Vegetable Parchment Company
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McCulloch Motors Corporation
Merck & Company, Inc.
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National Cooperatives, Inc.
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Norwich Pharmacal Company (Norforms)
Pitman-Moore Co. (Div. of Allied Labs., Inc.)
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Ralston Purina Company
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Reynolds Metals Company
Dr. Salsbury's Laboratories
Shakespeare Company
Sioux Steel Company
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Swift and Company (Agricultural Research)
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NEW McMILLEN SALES AREAS—Five promotions to new sales areas were announced recently by Dr. Charles W. Crowe, vice president of sales for McMillen Feed Mills. John Moore, territory manager in northeastern Indiana, has been named manager of a territory in west central Indiana. Don Long, territory manager in central Iowa, has been named manager in northeastern Indiana. E. P. Levering, now managing a territory in east central Missouri, has been named to manage a territory in central Iowa. James Snavely, presently an assistant territory manager in Indiana, will become manager in east central Missouri, and Russell Mason, now assistant territory manager in southeastern Indiana, will become manager of a territory in southwestern Indiana.

lb., and felt it was an insult to their intelligence. Let's also take a look at what that type of advertising does to public relations for agriculture.

For example, I'm quite sure you will agree that many farmers were losing money on 10¢ hogs. Yet many of your companies proclaimed in large ads that farmers were producing hogs for 6 to 7¢ a pound. I know and you know that many costs weren't figured in on that figure you used, including some feed costs. But the city consumer doesn't know this. He can only think that farmers are just belly-aching about nothing again. We have enough poor public relations for agriculture put out by uninformed parties so that we shouldn't add to it by industries interested in agriculture.

If we are to assume that the money spent for advertising is well spent, then we must assume that advertising carries some weight.

There is a terrific story to be told, in advertising, on cheapness of gains by using meat type hogs and tested breeding stock—besides selling feed and the future of the industry.

Committee Suggested

One producer observed that inasmuch as the feeds are becoming so complex, the individual farmer is very dependent on the integrity of the company with which he deals. He recommended that the feed industry, within itself, creates a committee with power to police the industry—this committee to have authority to put a stamp of approval on all companies whose products meet standards, and these standards to be realistic and high enough to be meaningful—a sort of "Good Housekeeping" or "good feeding" seal of approval.

This would be a big help to the average producer who is not well-informed on feed requirements, and who is nowadays but a feed specialist? The assurance that he was dealing with a company whose products met certain high standards would be a relief to many producers.

I believe this suggestion is worthy of consideration by the feed industry.

Integration

Vertical integration is becoming a common word in the farming and feed business, and in some instances has become a dirty word. Many of our midwest farmers are taking a hard look at this concept that dominates the broiler industry and has some of the bright boys all excited about hogs and cattle.

In the broiler business, it has wrecked many an individual producer. This July, I heard a plea by the poultry industry to the feed companies to cut back production to get out of trouble. Not a plea to producers, but a plea to the feed companies not to finance new construction, and to cut down on production.

What vertical integration will mean to the swine industry, we have yet to see. It has started, though, and it means we will have an accelerated movement of capital into livestock production and an expansion of capacity at a greater rate than needed. It will intensify, rather than solve, our over-all farm problem of constantly expanding production at a faster rate than demand.

When supply is in line with demand, a 5 to 10% increase in production means a 15 to 30% decrease in price. It is in this 5 to 10% overproduction side that vertical integration operates due to capitalization unwarranted by market demands.

Both farmers and feed companies should study carefully the long-run implications of this method of business organization, where the livestock producer becomes a hired man and individual initiative is removed.

Perhaps it's time that some of our misguided farm leaders took a look at the present trends in livestock production and tried to help the livestock producer rather than hinder him. I feel quite sure that if some of the heat that has been generated over flexible vs. rigid price supports were turned towards publicizing the effects of vertical integration, this movement would slow down considerably. Public opinion, whether we like to think so or not, carries a big stick.

We are in an era of specialization in agriculture and in swine production. I won't attempt to say wheth-

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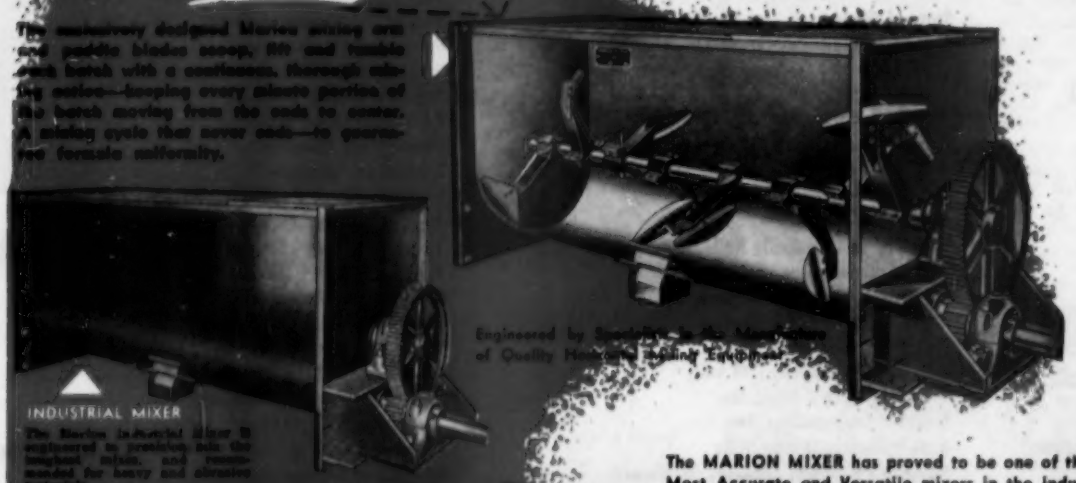

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Frank M. Ross

PRODUCTION SCHOOL SPEAKER—One of the principal speakers at the Feed Production School in Kansas City will be Frank M. Ross, agricultural economist with the Midwest Research Institute, Kansas City. Mr. Ross has had a broad background in the milling business and, since joining the research institute, has conducted feed industry research. He worked on the labor cost study reported at the 1956 production school, and he has made a study of costs, charges and efficiency of custom feed mills which will be reported at this year's school. The school, sponsored by the Midwest Feed Manufacturers Assn., will be held Nov. 20-22 in Kansas City. The Midwest association is urging early enrollment. The association may be contacted at 20 W. 9th St. Bldg., Kansas City 5, Mo.

er this is good or bad. On the plus side, however, we will see with specialization an improvement of quality and feed conversion. This can be achieved on the family farm as well as the large, hired-labor units without exorbitantly expensive equipment. I'm convinced that the limiting factor in swine specialization is not in nutrition or housing know-how. The stumbling block to widespread specialization with large numbers of hogs has been and will continue to be man's lack of managerial ability to cope with the problems which multiply in direct relationship to the size of operation. We have passed through an era of pig hatcheries, which blossomed out and faded again, due—in many cases—to the management requirements of the intensified units. Sometimes, I'm afraid, elaborate housing and equipment have been substituted for management with dire results.

Housing, Equipment

I understand that some concerns are interested in pushing complete confinement units for hog production which have price tags of from $50,000 to $300,000 attached to them.

Let's look at a few facts. Tenancy in Iowa is at the 50% rate, and in some counties up 69%. That eliminates 50 out of every 100 prospects. Due to the economic era in which we live, a farmer who does own his own place spends a good share of his life paying for $300-an-acre land and $10,000 to $20,000 worth of machinery needed to operate this place. This man, when he gets to the place in life where he can afford to sink $50,000 and up into producing pork, may just not be too interested in gambling at the odds in a business where prices fluctuate 100% within a year. I have yet to talk to any farmer, swine producer or individual, interested in spending his own money in that manner. It appears to me that this field is rather limited.

There does, however, seem to be an intermediate field of housing and production in which considerable work needs to be done to bridge the gap between what the farmer is at present using and the idealists' "futurama."

If feed nutritionists are interested in this approach to the swine specialization program, why not push demonstration farms of practical housing and equipment designed so that additions may be made as management ability and financial circumstances warrant?

Multiple farrowing is recognized as one of the answers to the industry's problems as well as helping the farmer level out his income during the year. The initial outlay for a multiple farrowing type of program need not be large, and this is good as the average farmer is not rolling in wealth. Between his banker and him, he keeps quite practical. There is nothing like spending one's own money or borrowed money to give a person a practical dollars and cents viewpoint.

I am not condemning the elaborate housing and controlled conditions necessary for carrying on experimental work at our colleges and feed company experimental farms. They are necessary to be able to evaluate accurately the work done. However, I do feel that there is a place for practical demonstration units, which could be shrunk or expanded to meet the individual farmer's desires and requirements. I congratulate a few companies for this approach. I recommend it to others and to our college.

Research

We have made very rapid strides in swine nutrition in the last 15 years. I would hazard a guess that we have reached the point of diminishing returns. We will make new discoveries, but our gain won't be as rapid as in the past. Perhaps this is good, as our farmer capacity to produce has outstripped demand and economists tell us this will continue to be true for many years to come.

For years, most research has been aimed at increasing production, and we farmers learn quickly. As each new production tool has come along, we've jumped on the bandwagon fast, or we fell off the back end of the treadmill. We've jumped on the bandwagon so fast that many of the new production tools have nullified themselves in less than a year and have

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Harry Fiste, feeding 100 head

I think that the gains are much faster and the bloom is much better. Their hair is in a lot better condition. I've had no cattle really go off feed.

Emanuel Schlund, feeding 70 to 80 head

They've got good shiny coats and they eat all the time. With green cattle on Dynafac we would make 3 1/2 to 4 lbs. daily gain.

Ed Borchers, feeding 500 to 700 head

I think these steers have been eating about 2 to 3 lbs. more grain per day and their hair looks good. Just seems to get a better finish on them with this Dynafac.

Joe Corpstein, feeding 1600 to 5000 head (feeding for prime)

We had 60 steers on test with Dynafac for 105 days that made gains of 3.8 lbs. per day and dressed out 62.08%.

Wilbert Anders, feeding 60 head

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*Armour brand tetra alkylammonium stearate

just helped create more over-all farm surpluses.

It's time that we seriously consider slanting more of our research towards producing quality, consumer preference and selling. We know how to produce too much pork already. Let's find out more about raising the right kind and selling it.

It's also time that we realize that we don't have a feed shortage or are not in a war emergency. In our eagerness to advance the field of swine nutrition, let's not go off half-cocked. Take time to check and double-check the experiments, and have these findings verified by other stations and evaluated by practical farm operations before issuing blanket recommendations.

Farmers justifiably expect reliable information from their state experiment stations. Let's be sure they get it. We hope that Iowa will continue to be the leader in swine research, as it is in swine production. Being first is fine—but let's be sure it's also right. It is confusing to farmers when recommendations from leading swine experimental stations differ, and also when these recommendations are changed within the year.

We are fortunate at Iowa State College to have a dean of agriculture who welcomes criticism and suggestion. He not only welcomes it, he has an advisory committee whom he asks for criticism. I would like to suggest, for what it's worth, to the swine department at Iowa State College that they also have an advisory committee of practical swine producers to help guide their program. These producers may be crazy—and sometimes I think that helps—but most of them aren't dumb. Many of these producers have a sound idea of what is needed in the field and an ability to evaluate its worth under average conditions. This might be worth a try.

There is a plea from many producers to simplify our feeds so that the farmer can utilize his grain at home, rather than having a trucking bill to town and back again. And I'm not talking about scooping ear corn into a mudhole, either. Every time this grain is handled, up go the costs, and farmers are getting allergic to rising costs.

There are numerous feed mixers on the market now that farmers can purchase. Producers would like to have premixes available that meet vitamin, antibiotic, and trace recommendations, which he could buy in one package and mix with his own farm grown and ground grains.

A year ago, I wrote to six or seven of our midwest experiment stations for recommendations as to grinding or self-feeding free choice, and from the variety of answers I received, I'm quite sure some re-evaluation should be done of this work. There seemed to be a general disagreement of results in relations to costs. Certainly, simplification might start here.

Summary

In summary, swine producers are interested in their industry in much the same manner as all the other segments are—volume at a profit. The means to this end is quality improvement, which all segments should work together to achieve.

They are dependent to quite some extent on swine nutritionists, and I use that term to cover feed manufacturers and experimental work. They want accurate, reliable information and reliability guides to help in choosing feeds. If possible, they would like simplification to cut costs.

If I were in the swine feed business and intended to continue in my chosen occupation for some years to come, I think I would be very interested in doing several things to help assure my continuance of bread and butter. I will make these as recommendations to individual companies and to the entire feed industry—

1. Sell producers on the meat hog and quality production.
2. Get behind the swine testing stations and push. Start more.
3. Work closely with county and state organizations of swine producers, whose interest is the same as yours, the future of the industry.
4. Back the National Swine Growers Council on its 10-point program of swine improvement.

Since the attempt by producers of red meats to exercise their constitutional right of contributing to a check-off fund for quality improvement and promotion of their product has, for the present, been defeated, it is more important than ever that the industry get behind the quality improvement and promotion programs of the National Swine Council.

We in the swine industry have a big job ahead of us. Let's all get together and push.

Herman B. Schutter

HUBBARD SALES—Appointment of Herman B. Schutter as territory manager for a new sales area in northwestern Iowa has been announced by Ogden Confer, vice president and manager of the Hubbard Milling Co. feed division, Mankato, Minn. Mr. Schutter has spent five years as an assistant manager of the Farmers Cooperative Elevator Co., Titonka, Iowa, and three years as manager of the Jewell (Iowa) Cooperative Elevator Co.

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Chemical May Control Internal Parasites

MANHATTAN, KANSAS—A new systemic chemical which has shown promise for the control of cattle grubs may also provide effective control of internal worm parasites, according to Kansas State College scientists.

The chemical, an organic phosphorus compound originally labeled as Dow ET-57 and now known as Viozene (O,Odimethyl 0-2,4,5-trichlorophenyl phosphorothioate) reduced cattle grub counts sharply in tests this past year at the Kansas Agricultural Experiment Station and at other experiment stations.

In one test at the Kansas Station, only one animal in 10 still had grubs a month after a single treatment. During the same period, grub counts for untreated animals increased from three to four a head to an average of 12 grubs an animal.

David Worley, Kansas State College graduate student in zoology, found that this same single treatment had a definite effect on parasite egg counts in a test run at the Juniata experimental farm of Gooch Feed Mills, near Manhattan.

Egg-per-gram counts dropped sharply within a week after the Viozene treatment, and the average egg counts for the treated cattle remained quite low throughout the 5-month duration of the test.

Mr. Worley now is studying the effect of Viozene to determine whether reduced egg counts were due to elimination of internal worms, or to suppression of their egg-producing capacity. Even if the chemical does no more than lower egg production by internal worm parasites, this will be of value in reducing contamination of feed lots and pastures, Mr. Worley said.

In the Kansas State College tests, wintering Hereford cattle were administered a single dose of Viozene in December, 1956, at the rate of 10 grams of chemical to 200 lb. of body weight. The Viozene was given either in a bolus (large pill) or in the feed.

Larro Farm Guards Against Power Failure

INDIANOLA, IOWA—When electrical power fails at the General Mills Larro Research Farm here, an alarm system goes into action to keep the farm functioning smoothly.

It is a battery-operated watchdog connecting critical points around the farm with the homes of department superintendents. A 5° variation in temperature of the cage layer house or a 2° variation in the hatchery temperature sends an impulse through the alarm system.

The alarm also rings if the farm's water pumping system fails to operate or if heat lamps go off in the pig brooders. When this happens, farm superintendents have tractor-operated generators functioning within 10 minutes after the alarm is sounded.

Gill Gapp, farm manager, said the system was used 12 times last year. Any one power failure without auxiliary power could be a costly and disastrous mishap on a research farm, he said.

"Now, let me get it straight. They want the formula changed on this feed which formula we changed last week from a formula discarded in favor of a previous formula change."

California Reports Farm Supply Sales

SAN FRANCISCO — The sales of farm supplies in California, including animal and poultry feedstuffs, amounted to $78,739,000 during the second quarter of 1957, according to the California State Board of Equalization.

Farm implement dealers handled $47,803,000 worth of business during the three-month period, April 1 to June 30, dropping almost 14% from the corresponding period in 1956, and farm and garden supply stores did $30,926,000 worth of business, increasing more than 4% in the same period.

Many of the retailers in these two classifications handle feed products as well as other agricultural equipment.

Poultry Program Set

MONTGOMERY, ALA.—A poultry program will be part of the annual meeting of the Farm Bureau here Nov. 3-6, W. L. Walsh, executive secretary of the Alabama Poultry Industry Assn. has announced.

The program, scheduled for Nov. 4, will include talks by O. H. Green, past president of the American Poultry & Hatchery Federation, and Curtis Collier, southeastern manager for the Poultry & Egg National Board.

A tour of egg grading and processing plants will be held, with a visit to a large supermarket to study methods of displaying poultry and poultry products, Mr. Walsh said.

HOLDS OPEN HOUSE

LAMBERTON, MINN. — The new feed mill completed by the Farmers Elevator Co. held open house recently. The mill has installed new equipment for grinding, mixing and manufacturing feeds of all kinds.

LIQUIMATIC — REMOTE HYDRAULIC CONTROL OF WENGER METERED FLOW PUMPS now makes complete automation of Single or Multiple Liquid Applications practical. Other Wenger automatic controls assure operation of the most difficult-to-handle job in the feed mill—uniform liquids application—with one man remote control from the Formula Control Center in your mill.

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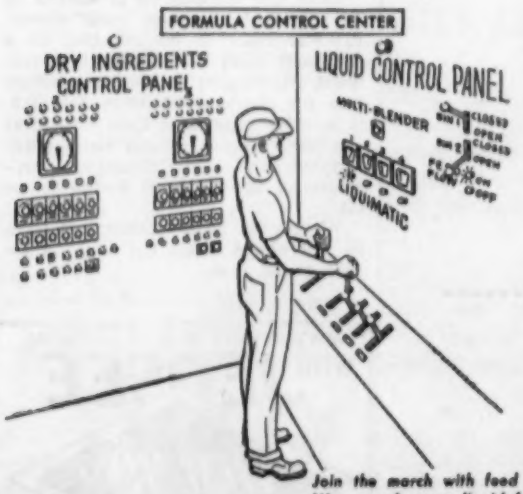

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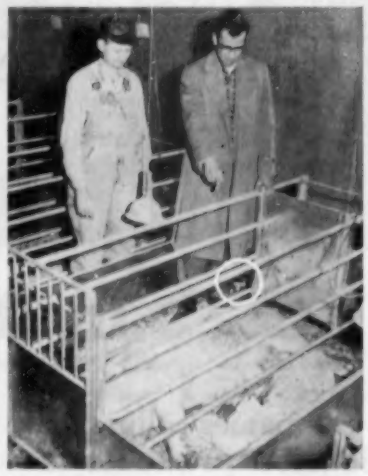
BROKERS IN FEED INGREDIENTS

EXTERIOR OR MULTIPLE FARROWING HOUSE — In this laminated-rafter farrowing house, Golden Sun Milling Co. has brought together ideas calculated to help swine producers take advantage of new methods and rations for increased hog production and feed efficiency. Note the special observation rooms for visitors, attached to right side of main building.

Golden Sun Milling Builds "Hog House of Tomorrow"

Both service to farm customers and research work at the Golden Sun Milling Co., Estherville, Iowa, have been improved as a result of the new "hog house of tomorrow" which the firm has built. By tying together many of the newest ideas in hog raising, the company is able to demonstrate these building and management practices at the same time it is running carefully controlled experiments.

"We have tried to build the typical hog house of tomorrow, with controlled ventilation and temperature, farrowing stalls and temperature controlled floors to prevent dampness," says Marvin E. Rohlf, Golden Sun's director of nutrition and research. "We feel that many of the new and revolutionary features of this type of house will be common and necessary equipment in the hog production era we are fast approaching."



UNIFORM, LARGE LITTERS—Marvin Rohlf, director of research and nutrition for Golden Sun Milling Co., checks a healthy litter of pigs with Orville Sampson, the firm's experimental farm manager, in one of the all-metal, draft-proof stalls. Circle inset by Mr. Rohlf's foot points out one of the automatic pig waterers located out of sow's reach.

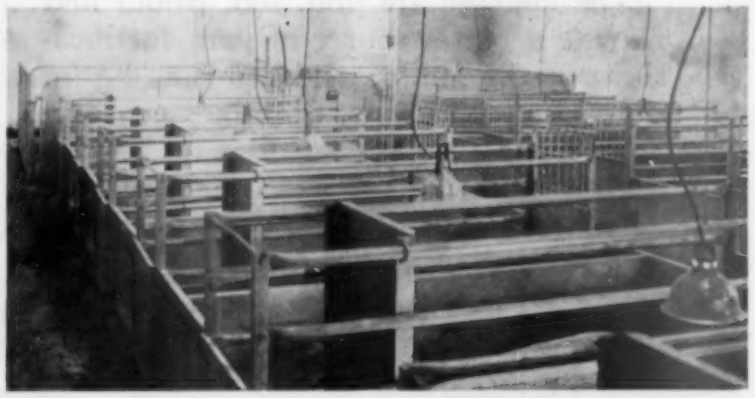
From its own standpoint, Golden Sun is able to use the house for experiments such as feeding of brood sows during lactation, formulation of pig starters for early weaning, anemia prevention in baby pigs, litter efficiency, life cycle feeding, disease control and other areas of swine research.

From the farmers' standpoint, the building presents a system of labor-saving hog production, including the opportunity to farrow and market hogs from three to six times a year on an efficient basis. The aim is also to help stabilize hog producers' incomes by the frequent marketings.

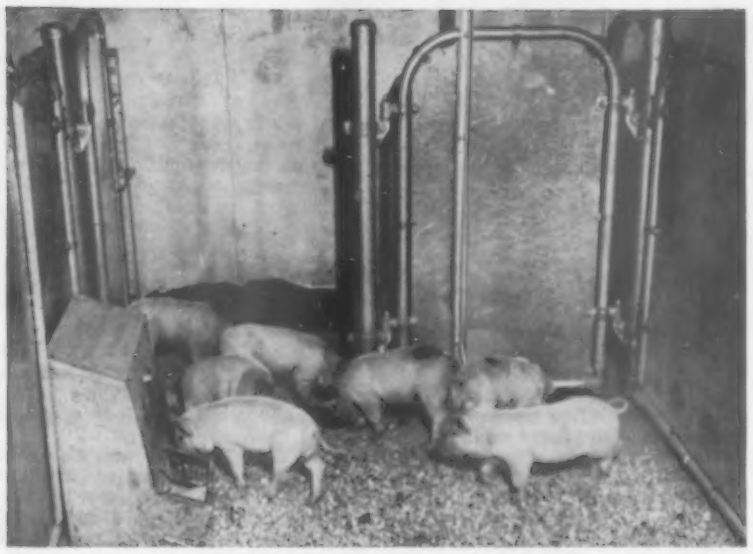
New Building Described

Here's what farmers see when they come to look at the new hog house: An 80x28-ft. double-walled building with arched, laminated rafters. It is divided into a multiple farrowing room on the north and nursery pens on the south. All equipment is permanently installed. However, the nursery pens are more for research than for use by a typical hog producer.

There are only two small windows at each end of the building, to keep heat loss at a minimum. A heated, forced-air ventilation system helps maintain the important temperature-



INTERIOR OF NEW HOG HOUSE—Twelve all-metal farrowing stalls, the smallest number considered practical for multiple farrowing operations, are permanently installed in the building, as seen above. Two holding and feeding pens are at far end of building, as well as an alley, for washing sows prior to farrowing. Golden Sun feels 80% of the pen cleaning is eliminated if sows are let out for eating both morning and night. Heat lamps, suspended by sturdy chain rather than the electric cord, are turned off as soon as newborn pigs are dry. Floor area away from sows is heated by copper tubing, buried in concrete, which circulates hot water.



NURSERY PEN FOR WEANED PIGS — Just as soon as baby pigs are weaned, at an early age, they go into these nursery pens equipped with small self-feeders and automatic waterers. The 12 pens serve as experimental units for the firm's feed research work.

humidity balance. Fresh air may be heated and circulated in either the baby pig nursery or the farrowing section, or air from inside the building may be heated and recirculated. The amount of fresh outside air in proportion to inside air circulated depends upon the number of sows and pigs in the building and the outside temperature and humidity.

One of the big features of the hog house is the copper tubing buried in the concrete floor in the farrowing area. A 70-gal. water heater supplies enough hot water to be pumped through the ¾ in. copper tubing by a small electric impeller pump. The water returns for subsequent reheating.

Heat Draws Pigs

As Mr. Rohlf explains it, the pipes are placed close to the surface of the floor so the heat will not move horizontally more than 6 in. on either side of the pipes, so as not to warm the portion of the floor where the sow lies. The idea is to warm only the area away from the sow, to draw the pigs safely out of danger of being overlaid.

With this setup, says the nutritionist, warmth of the floors can be controlled at any temperature desired, plus or minus 2 or 3°. "We are keeping the inside temperature of the house at around 55 to 60° in the winter, fall and spring, but the floor temperature at 82 to 85° where the pigs lie," says Mr. Rohlf. "We've been able to dispose of heat lamps except to dry newborn pigs and keep the pigs lying on their sides of the stall away from the sow. Instead of the pigs bunching up and lying on top of one another, they spread out and lie on the floor, which is warmer than lying on another pig. Our death loss due to crushing is very, very small."

Approximately 85 litters have been farrowed in the building to date, mostly during the colder winter months. "Yet, our pig losses from overlaying have not averaged over 1½% over the entire year," said Mr. Rohlf.

The heat pipes in the floor were installed in the concrete at the time of construction. The floor is a 6-in. layer of coarse gravel, covered with a 3 in. layer of insulated concrete composed of ground zonolite and cement. The final 2½ in. layer of concrete was poured after the copper tubing was in place.

Special Features

The 12 farrowing stalls take up a 50x28-ft. area, while the nursery room where the pigs are moved at weaning age of two to three weeks, is 30x28-ft. and divided into 12 units also. Floors in both the farrowing and nursery rooms are sloped to alleys for easier washing down when they are cleaned. Both the farrowing and nursery pens are of solid construction near the floor to prevent possible drafts.

Another special feature in the building is that in addition to special waterers for individual sows, there are self-cleaning water cups for the pigs in their area of the farrowing stalls. These pigs' waterers are out of the sows' reach, to eliminate sanitation and disease problems. Over in the nursery are more automatic waterers for weaned pigs, and a special alley for cleaning, known as the Danish "dunging alley," is located between the pens and the outside barn wall for added cleanliness and sanitation.

All inside equipment is of metal

SPECIAL CLEANING ALLEY—Behind the row of nursery pens, next to the outside wall is this Danish-type "dunging alley." Manure is taken out of end of barn, at end of alley. Inside walls are sheet rock and are steamed along with all equipment in the building.

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FE/439

CONSTRUCTION VIEW OF HEATING UNIT — Picture shows ¼ in. copper tubing laid out on floor before final layer of concrete was poured. A water heater and impeller pump maintain supply of recirculated hot water through tubing, only where pigs will lie.

for both sanitation and low upkeep over a period of years. The inside walls are of fireproof sheet rock, sealed with caulking. The walls don't crack or warp despite the periodic steam-cleaning they get. Between this sheet rock and the outside wall there is insulation of balsam wool batting, while the overhead laminated rafters are insulated with poured rock wool. The upper floor of the building is used only as dead air space at present, but could be used by a farmer for overhead feed bins or bedding storage.

While this building is estimated to cost about twice the average hog house currently found on many farms, Golden Sun feels hog producers can justify it by realizing up to six farrowings a year under these controlled conditions, instead of the usual two. Feed costs can be cut and loss of pigs virtually eliminated, the company said.

Whether farmers pick up and use every idea put into the hog house or just a few, they at least can see them being put to the test in their own community, in Golden Sun territory.

Indiana Poultry Group to Hold Annual Meeting

INDIANAPOLIS — All aspects of the poultry industry in the State of Indiana will be studied by members of the Indiana State Poultry Assn. when the group holds its annual meeting Oct. 22-23 at Hotel Antlers, Indianapolis.

Promotion, integration, nutrition, service and a look at the future are all included in the program. Sessions will start at 10 a.m. Oct. 22 and 9 a.m. Oct. 23.

Robert L. Hogue, executive secretary of the association, will sound the theme of the convention when he speaks at the opening session on the "unlimited" opportunities facing the state's poultry industry. A panel will discuss promotional ideas.

Ray Parmenter, Franklin, Mass., second vice president of the American Poultry & Hatchery Federation, will discuss the question of whether integration destroys initiative, and a swine nutritionist, Dr. Damon Catron, Iowa State College, is scheduled to discuss ways to increase profits by minimizing stresses.

M. G. Whitehead, Goshen, will discuss acceptance of the consumer, and a panel will follow him with a discussion on how to get the most out of franchises.

The Oct. 23 program will include a report on research by Eli Lilly & Co., as well as research under way at Purdue University. Brain storming sessions on poultry problems, youth awards, industry awards, a tour of Allison's aircraft engine division of General Motors Corp., and panels on poultry problems are all scheduled for the final day of the meeting.

Glidden Co. to Build Edible Protein Plant

INDIANAPOLIS—A new $4 million edible protein plant, reported to be the world's first facility for commercial production of this soybean derivative, will be constructed here by the Glidden Co., Dwight P. Joyce, chairman and president, has announced.

The new plant, Mr. Joyce said, will make a contribution to better human nutrition through the production of concentrated edible proteins, latest research achievement of Glidden's chemurgy division scientists. Construction of the new plant will begin immediately, Mr. Joyce said.

The new protein product will be marketed under the registered trademark, "Promine." Promine, when incorporated in staple foods, builds up protein levels to considerably higher nutritive standards and imparts many desirable physical characteristics to such products, Mr. Joyce said.

The plant will be operated by Glidden's Chicago-based chemurgy division. Richard O. Westley, vice president, directs operations of the division, which operates a 3 million-bushel grain elevator and soybean processing plant in Indianapolis, as well as two large elevators and a processing plant in Chicago.

Dr. J. P. Delaplane, Texas A&M, Dies

COLLEGE STATION, TEXAS—J. P. Delaplane, head of the department of bacteriology and hygiene at the School of Veterinary Medicine, Texas A&M College, died Sept. 24.

Dr. Delaplane was well known to the feed manufacturing industry, having appeared on programs of the Texas Nutrition Conference and having worked with feed manufacturers on many problems in the state.

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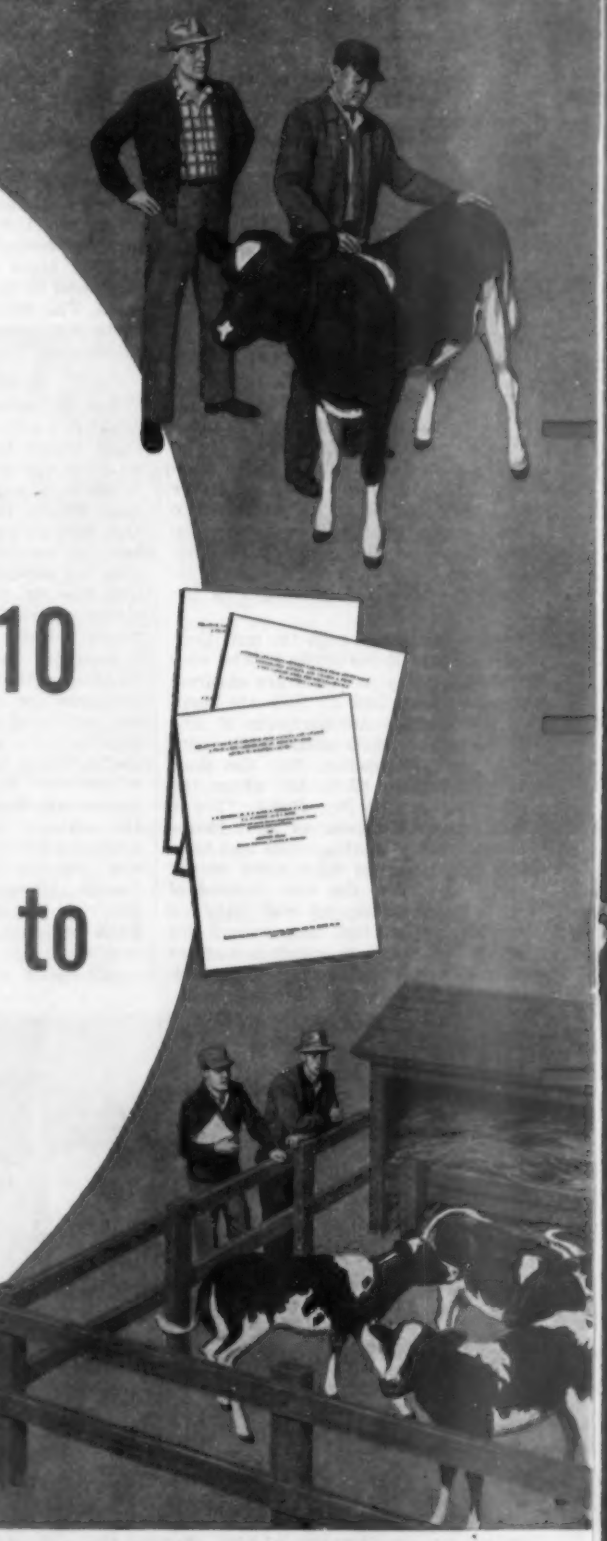

M. J. Allpress | J. J. Baker | R. R. Bartlett | W. R. Hoffman

Arcady Appoints Four Territory Assistants

CHICAGO—Four assistant territory managers in Indiana have been appointed by the Arcady Farms Milling Co., Chicago, according to T. L. Mitchell, vice president-sales.

The four men, who have completed an eight-week training course in livestock and poultry feeding and management, are Merlin J. Allpress, Coal City; James J. Baker, Terre Haute; Richard R. Bartlett, Ft. Wayne; and William R. Hoffman, Clay City. Four weeks of the course were spent in training with "on the farm" feeding situations and four weeks were devoted to classroom work.

Baughman Announces Two Appointments

JERSEYVILLE, ILL. — Charles C. Bell has been appointed transport engineer for Baughman Manufacturing Co.'s commercial sales division, according to an announcement by James E. Cadle, Jr., assistant general manager.

Mr. Bell has been with the firm for five years and has played a major role in the design and manufacture of the firm's bulk transport bodies. Prior to his Baughman employment, his background included 30 years in industrial engineering and administration.

David Fowler has been appointed eastern sales engineer. He formerly was employed by the St. Louis division of Young's Sales Corporation, distributor and contractor for Johns-Manville.

Grain, Concentrates Fed to Milk Cows Hit Record Oct. 1

WASHINGTON—Crop correspondents reporting to the U.S. Department of Agriculture continued to feed record quantities of grain and concentrates to milk cows in their herds on Oct. 1, according to the Oct. 1 crop report.

The average of 5.27 lb. for Oct. 1 was 5% above the previous high for that date last year and 26% above the 1946-55 Oct. 1 average. The report shows that record quantities were fed on Oct. 1 in the northeastern regions and the West, while feeding rates equalled earlier highs in the west north central and south Atlantic states.

In south central states, however, farmers fed less grain than last year, when feeding was heavier because of drouth. For the entire country, the feeding rate increased 6% from Aug. 1 to Oct. 1, compared with the usual gain of 9%. The seasonal increase was more than usual in the east north central states, but equaled or was less than the average change in other regions.

Three-fourths of the farmers reported feeding some grain and concentrates to their cows on Oct. 1. That's three percentage points less than on the same date last year, but a point above average.

The value of grain and concentrates fed to milk cows averaged $2.99 cwt. on Sept. 15—3% below last year and the lowest value for the date since 1949.

Milk production on farms totaled 9,611 million pounds in September. This is a new record output for the month, and it is 1% above the previous high set last year and 5% more than the September 1946-55 average. Total production in the first nine months of this year was 99.4 billion pounds. This record for the period was nearly 1% more than the previous high of 98.5 billion pounds produced during the first nine months of last year.

Land Leasing Surplus Crops List Changed

WASHINGTON—The U.S. Department of Agriculture has announced that soybeans have been added and flaxseed deleted in the list of crops designated as surplus on lands leased from U.S. agencies.

Any of the 12 designated crops produced in violation of leases will not be eligible for price support.

The revised list of designated surplus price-supported commodities is: cotton (upland and extra long staple), barley, dry edible beans, corn, grain sorghums, oats, rice, rye, soybeans, wheat, peanuts, and tobacco.

Designation of these crops as surplus carries out the President's memorandum of May 21, 1956, and also Section 125 of the Soil Bank Act.

The Storrs (Conn.) Agricultural Experiment Station investigations into vitamin A in dairy calf feeding lead to three significant conclusions.

Experiment No. 1

Conclusion: **CALVES BENEFIT GREATLY FROM EVEN LOW-LEVEL VITAMIN A INTAKE**

Vitamin A fed at low levels is 4 to 10 times as effective as carotene. Because the carotene and vitamin A reserves of a new-born calf are low and because calves, as is well known, are poor utilizers of carotene, some vitamin A is necessary to prevent physiological and histological deficiency symptoms of vitamin A. Even low-level vitamin A feeding proves highly beneficial.

(As reported in Jour. of Dairy Science, XXXVII, July 1954)

Experiment No. 2

Conclusion: **CALVES BENEFIT EVEN MORE FROM MEDIUM TO HIGH-LEVEL VITAMIN A FEEDING**

Vitamin A fed at sufficient levels to provide adequate storage is 5 to 24 times as effective as carotene. Plasma and liver vitamin A concentrations, as well as depletion time, were employed in this experiment, and the higher the feeding level, the more effective vitamin A proved to be.

(As reported in Jour. of Dairy Science, XXXIX, Nov. 1956)

Experiment No. 3

Conclusion: **FEEDING HIGH LEVELS OF BOTH CAROTENE AND VITAMIN A HAS NO ADVERSE EFFECT ON THE UTILIZATION OF EITHER. THE RESPONSE IS ADDITIVE.**

This experiment was undertaken because it has been reported that large doses of vitamin A suppress plasma carotenoid levels in calves and in older cattle. It was found that, contrary to popular conception, the response is additive. Increased intake of vitamin A was found to increase concentrations of plasma vitamin A and to increase liver storage.

(As reported in Jour. of Dairy Science, XXXIX, Dec. 1956)

In all three experiments, the researchers used Nopcay 10 as a source of vitamin A in dry carrier. This Micratized® vitamin product has been employed in experiments by more than 50 colleges and experiment stations because of its absolutely proved stability and availability.

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New Services
New Literature

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5829—Corrugated Bulk Container

A corrugated bulk container which holds from 1,000 to 1,500 lb. of a product is being manufactured by the Gaylord Container Corporation Division of Crown Zellerbach Corp. The container is said to provide a

clean storage box with a cover for protection from contamination and makes it possible to obtain maximum storage capacity safely and efficiently in a warehouse. The corrugated containers can be knocked down flat for easier storage until they are to be used again. The containers can also be used for shipping merchandise. Check No. 5829 on the coupon and mail it to secure details.

No. 5837—Poultry House Literature

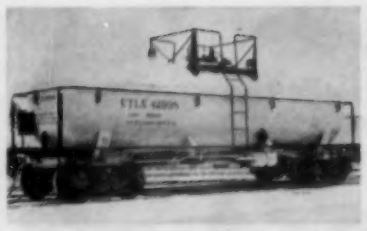
New literature describing Western Production Co.'s "controlled" poultry houses is available. One of the houses is the floor type house and the other is a cage layer house. In each instance a complete package is offered, consisting of the house and all of its ventilation and other equipment. The literature will be sent if you will check No. 5837 on the coupon and mail it to Feedstuffs.

No. 5844—Vacuum Cleaners

A new line of heavy duty wet-dry vacuum cleaners has been introduced by the Clarke Sanding Machine Co. The line includes six units ranging from a ½ h.p. model with 2½ gal. wet and ½ bu. dry capacity to a 1½ h.p. conversion unit which converts a 55-gal. drum into a vacuum cleaner tank with 50 gal. wet and 6½ bu. dry capacity. Check No. 5844 on the coupon and mail it to secure details.

No. 5870—Tank Car

A new multi-purpose tank car which incorporates two fundamental changes in tank car design—elimination of the dome and underframe—is announced by the Union Tank Car



Co. Called the "HD" tank car, the unit serves where previously four separate tank classifications were required, company officials say. With only minor modifications the new tank car can be used as a general service car; for carrying acid; as an insulated car; and as a low pressure car. Secure details by checking No. 5870 on the coupon and mailing it to this publication.

No. 5871—Feed Flavor

A product described as "an all-purpose sweet feed flavor" has been developed by the Flavor Corporation of America. The product, sold under the trade name Sucro-Flavor, is "an intensely sweet concentration of taste-tested feed flavors and BHT antioxidant in water soluble powder form," says the manufacturer. One pound is equal to 100 lb. of sugar in flavored sweetness, according to the manufacturer. "Sucro-Flavor does not cause flushing or other ill effects in birds and animals," according to a company official. The product "stabilizes fats and retards loss of potency of important vitamins such as A and E, thereby helping to prevent many deficiency diseases," it is claimed. For literature, prices and free samples, check No. 5871 on the coupon and mail it to Feedstuffs.

No. 5838—Towing Tractors

The Frank G. Hough Co. has introduced its first two "Paymover" towing tractors for commercial applications. The two machines are the model T-50 with 5,000 lb. drawbar pull and the model T-60 with 6,000 lb.

drawbar pull. They are two-wheel drive models, and feature torque-converter drive and automatic transmissions. A wide variety of coupler attachments is available. Check No. 5838 on the coupon and mail it to secure details.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5794—Pelleting equipment bulletin, Sprout, Waldron & Co., Inc.

No. 5795—Combination hammer mill and feed mixer, Duplex Mill & Manufacturing Co.

No. 5796—Dust filter unit with features of a cyclonic dust separator

(Turn to WORTH LOOKING INTO, page 76)

Send me information on the items marked:

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- ☐ No. 5837—Poultry Literature
- ☐ No. 5838—Towing Tractors
- ☐ No. 5844—Vacuum Cleaners
- ☐ No. 5870—Tank Car
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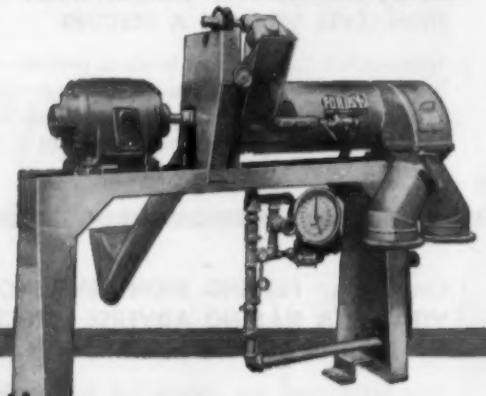

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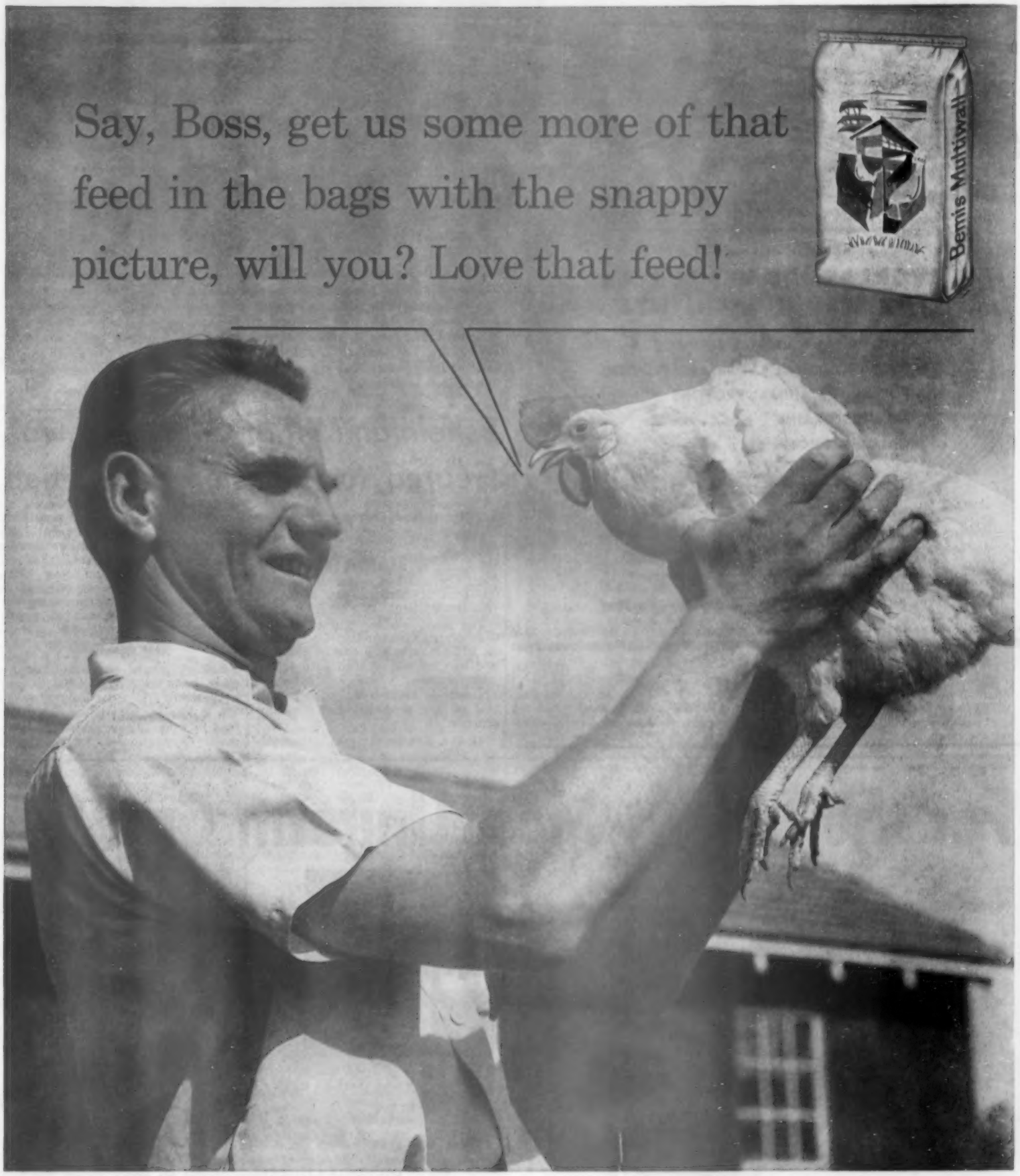

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JOIN IN CEREMONY—Three great grandsons of the founder of John W. Eshelman & Sons joined with other officials in the opening ceremonies for the company's sixth milling operation at Chamblee, Ga. Shown in the group here, from the left, are: Raymond D. Benner, plant manager; Herbert R. Eshelman, Jr., John B. Eshelman, Phil Campbell, Georgia's commissioner of agriculture, and Howard J. Eshelman, Jr. The Eshelmans are great grandsons of the founder and are company vice presidents. Mr. Campbell spoke during the ceremonies.

Eshelman Mill at Chamblee, Ga., Geared to Precision Production

By Special Correspondent

Feed milling operations in the new Chamblee, Ga., plant of John W. Eshelman & Sons, are now under way. The mill has a capacity of 60,000 tons of formula feed annually. (Feedstuffs, Sept. 28, page 58.)

The plant was constructed by the Gulf States Construction Co., Atlanta, in 13 months at a cost of $750,000 and was recently opened with a formal ceremony which was attended by several hundred dealers, livestock and poultry producers and company officials.

H. Roy Eshelman, president of the Lancaster, Pa., company, says that the plant "contains equipment that represents the latest developments in feed formulation." He states that the mill is an "almost completely automatic plant—mixers and blenders will accurately mix dozens of ingredients ranging from tons to grams with laboratory precision."

New Equipment

The equipment and capacities include hammer mills, 14,000 lb. per hour; grain and pellet bagging scale, 700 lb. per minute; mixer, 6,000 lb.; feed finisher, 30 tons per hour; automatic bagging scale, 1,000 lb. per

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A well constructed light model—high capacity with low operating cost.

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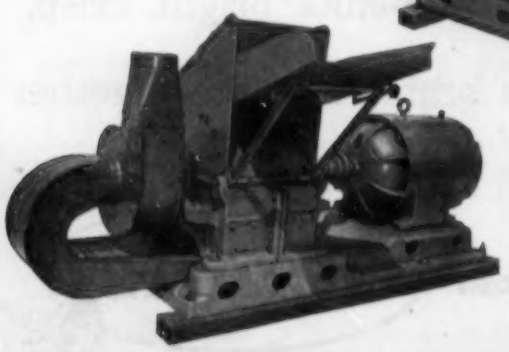

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Jay Bee Hammermills are the standard of comparison for high capacity — low operating cost — trouble-free performance — long life. They are guaranteed to outgrind and outlast all other makes, conditions being equal.

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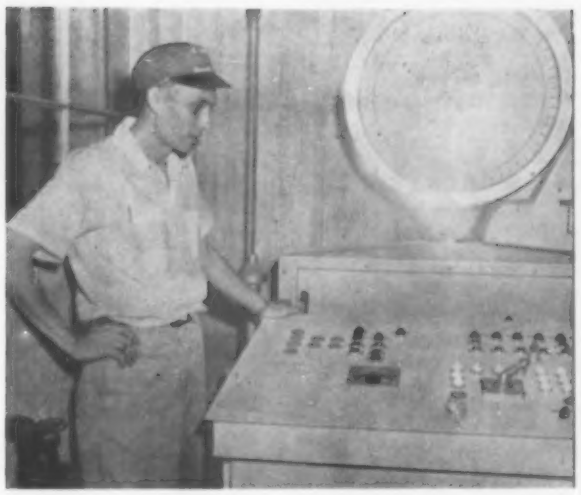

ESHELMAN OPERATION—Newton Allen, superintendent of John W. Eshelman & Sons' new feed plant at Chamblee, Ga., is shown with the mill's master control panel in the picture at the left. At the right two employees are shown weighing and bagging laying mash. The plant has a normal capacity of 60,000 tons annually.

minute; receiving separator, 2,500 bu. per hour; bucket elevators, 2,500 bu. per hour; truck scale, 50 tons; 75 electric motors, ranging from ¼ to 100 h.p. Grain storage capacity of the plant is 90,000 bu.

The Chamblee plant, which will manufacture the complete line of Eshelman Red Rose feeds, will produce both bagged and bulk feeds for either truck or rail distribution. The plant is served by the Southern Railway System which operates in the mill's primary market area of Georgia, Alabama, northern Florida and western South Carolina.

Raymond D. Benner is the plant manager and Newton Allen is the mill superintendent. Mr. Benner joined the company's sales force in 1940 and served as warehouse manager and salesman in the Georgia-Alabama territory.

Company officials state that the new plant supplements the production of mills at Tampa, Fla., and Sanford, N.C. Sales promotion efforts will center around the present dealer organization, which will be expanded as rapidly as needed.

They add that the firm has no immediate plans for getting into broiler or commercial egg financing but when conditions warrant additional activity in that direction, the "decision will be made at that time."

The new plant will have bulk trucks available for dealers who are prepared to handle bulk feed but some time will be needed before it can be determined what percentage of the feed will be delivered in bulk, the officials state.

Called Important Area

At a luncheon prior to the recent open house for visitors, Herbert R. Eshelman, Jr., vice president of the firm, said the Chamblee location, in metropolitan Atlanta, was selected "after intensive and exhaustive study and research of the area which indicates that Atlanta is the economic dynamo of the South."

He expressed the firm's appreciation for the assistance given in securing the site and arranging for other details essential to the construction of the plant.

Phil Campbell, Georgia's commissioner of agriculture, praised the firm's farsightedness in locating in Atlanta, and said the selection of the site "may well be a tribute to the growing agricultural economy of the South and Georga's leadership." He added that expansion of hog growing as well as a steady increase in dairy farms indicates the opportunity for feed manufacturers in the South and emphasizes the need for additional feed manufacturing facilities in the area.

The Chamblee plant is the company's sixth milling operation. Other plants are located in Lancaster and York, Pa.; Circleville, Ohio; Tampa, Fla., and Sanford, N.C.

Members of the third and fourth generations of the founder, John Eshelman, now head the company. The president is H. Roy Eshelman and secretary-treasurer is Howard J. Eshelman, grandsons of the founder. Company vice presidents are H. R. Eshelman, Jr., Howard J. Eshelman, Jr., and John B. Eshelman, Mr. Eshelman's great grandsons.

Feed Plant Expansion

MARION, OHIO—Martel Grain & Supply has completed a 40 by 60-ft. addition to its feed mill here. An 18,000-bu. silo also has been constructed.

Included in the $83,000 project are new grain handling units, a corn sheller, hammer mill, three feed mixers, an automatic molasses blender, a cattle weighing trailer with portable scales and a 50-ton scale.

Missouri Evaluates Gilt Raising Plans

COLUMBIA, MO.—Gilts raised on concrete in confinement up to 200 lb. can farrow and wean as many pigs as identical gilts raised on red clover pasture, recent experimental trials at the University of Missouri show.

Leland Tribble, swine specialist at the university, says seven gilts confined on concrete farrowed an average of 11 pigs per litter. Seven identical gilts kept on pasture farrowed 10.9 pigs per litter.

All 14 gilts were full-fed a good ration in self-feeders until they weighed 200 lb. Then all were handled in the same manner, each getting 5 lb. of feed daily until she was bred. The experiment started with 16 gilts, all Landrace-Poland China crossbreds. Only one gilt in each lot failed to settle.

All pigs were weaned at eight weeks of age. The close comparison: Gilts raised on pasture weaned 9.1 pigs per litter that weighed 33 lb. each; those raised in confinement weaned an average of 9.3 pigs per litter, weighing 32 lb. each.

Dry Skim Milk Production Down

WASHINGTON — The production of dry skim milk for animal feed totaled 1,200,000 lb. during August, down 20% and 21%, respectively, from a year earlier and the average for the month, according to the U.S. Department of Agriculture. The combined production for the first eight months of 1957 totaled 11,300,000 lb., 7% less than the same months a year earlier.

Selling prices of dry skim milk for animal feed in August averaged 10.24¢ lb., an increase of 2/10¢ from the previous month and 3/10¢ from a year earlier.

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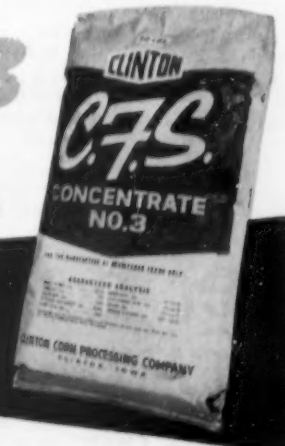

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Corn Becoming Cash Crop in Southeast As Livestock Increases in Importance

WASHINGTON—A corn revolution is developing in the Southeast, according to the October issue of Agricultural Research, a publication of the U.S. Department of Agriculture.

Corn crops, once used almost entirely for farm animals and home consumption, are becoming cash crops as livestock increases in importance, the publication states. Last year the area grew 245 million bushels of corn, compared with 190 million in 1941.

This means a need for new varieties, different types of equipment and more effective disease, insect and rodent control. Storage facilities must be built and marketing places arranged. So say USDA specialists.

Southern corn breeders are stressing husk protection from insects as well as shorter, lodging-resistant stalks easier to harvest by machine.

Dixie 18, a hybrid with tightly wrapped husks, has already replaced many of the older Southern varieties. Tight husks offer some of the needed protection against the corn earworm, which attacks corn in the field, and against the rice weevil, which infests in the field as well as later. But tightly wrapped shucks make husking with corn pickers, picker-shellers, or corn combine attachments difficult. This emphasizes the need to develop other ways to protect corn from insect infestations.

Corn in Demand as Feed

With the growing demand for corn as a feed, there is a trend to Corn Belt hybrids—which yield well and harvest easily but have loose husks that make them subject to insect damage. With power equipment, loose-husk varieties may be harvested and shelled quicker than those with tight husks. But many say advantages of loose husks are outweighed by disadvantages of corn earworm or rice-weevil infestations in the field.

Agricultural Research Service entomologists are studying the corn earworm and seeking ways to fight the sugarcane borer, corn stalk borer, soil insects and other field pests. A search for insecticides is under way in cooperation with Mississippi, Oklahoma and Georgia agricultural experiment stations.

Biological control of insects is also under way.

Drying a Problem

Entomologists are studying the rice weevil in stored corn. Infestations of this and other storage insects can be minimized if the corn is harvested as soon as it is mature—that is, when the moisture content of the kernels has dropped to about 30%. Then the corn must be dried mechanically or stored as silage for direct feeding.

ARS agricultural engineers are experimenting in Athens, Ga., to develop low-cost mechanical driers — some using unheated air, some heated air. Then the grains can be stored in bins that are easy to fumigate and safe from insects.

Off-farm storage problems are under study by Agricultural Marketing Service engineers. Corn must be properly stored for protection against insects, moisture migration, high temperature and contaminating odors.

In addition to new storage facilities for corn, market arrangements have been planned with more attention paid to selling by grades.

Mechanization is moving into the South. Midwest farmers went from hand methods to corn pickers, then to picker-shellers. Southeastern farmers may go directly to picker-shellers—harvest shelled corn, dry it mechanically, store the crop in bins—rather than pick ear corn and allow it to dry under conditions inviting high insect and rodent losses, the publication states.

"This previous experience you claim to have had with machines—what were they, slot or pinball?"

Feed Plant Equipment Installations Made

A number of feed firms have completed the installation of new equipment. A complete feed processing plant has been installed at the La Follette (Tenn.) Produce Co. and a complete hammer mill setup has been installed at Old Heaven Hill Dist., Bardstown, Ky.

Two new feed plants placed in operation recently are the Bates Farm Supply, Dry Ridge, Ky., and Lipscomb Farm Supply, Walton, Ky. Installations were by J. W. Cherry, Stanford, Ky., distributor of "Jay Bee" hammer mills.

Sheep, yes. And with poultry, hogs, rabbits, cattle, etc. the story's just the same: animals sit up and take notice when their feed is quality, tasty pellets made on California Pellet Mills. Find out why More CPM Mills are Sold Today than All Other Makes Combined!

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Muscatine, Iowa—Feed mixers can now formulate their feeds with Solulac and feel confident that the supply will be continuous. So reports a late bulletin from Grain Processing Corporation, telling of increased production. Accordingly, GP recommends that feed mixers take advantage of Solulac for its high nutritional values, plus unidentified growth factors and vitamins.

Solulac is available in 50 and 100 pound bags or bulk carloads. Feed mixers are urged to write, wire or phone.

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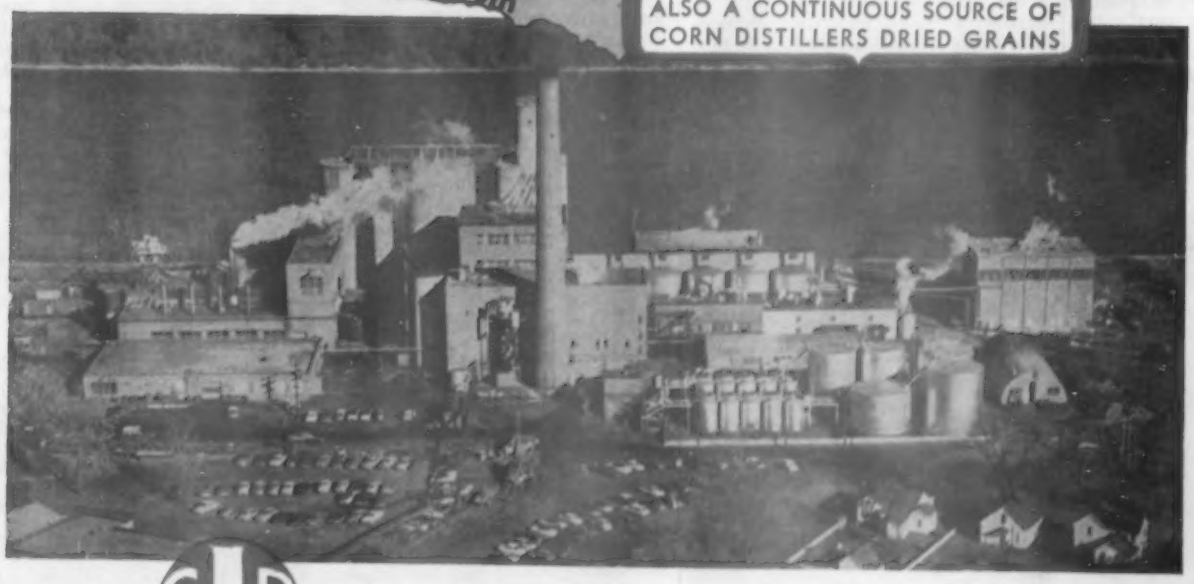

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Feed Mill Design and Production Cost

By T. E. Stivers
Milling Engineer

T. E. Stivers

EDITOR'S NOTE: A rather comprehensive presentation of information and suggestions on feed mill design and production costs was prepared recently by T. E. Stivers of the T. E. Stivers Co., milling engineers, Decatur, Ga. Mr. Stivers covered the general subject of mill design and building costs, including bulk depots as well as mills. In addition, he discussed factors affecting operating costs and analyzed available information on labor and other costs. Some of the information applies to the Southeast in particular, but feed mill operators in other areas also will find the discussion, applying to small as well as large plants, of interest. This article is from a talk by Mr. Stivers at the Georgia Feed Assn. convention.

I have divided my discussion into two general areas: First, some design and building cost information on some of the various types of feed and grain plants that have gone up in the Southeast recently; secondly, some operating cost figures that will show where you may want to look first to invest your time and money for quickest returns.

MILL DESIGN AND BUILDING COSTS

Basic Things: The basic things needed in planning a feed mill include the following:

1. Formulas to be made.
2. Ingredients, sources, and whether received bag or bulk via truck, rail or barge.
3. Tons per hour or day required now, and future.
4. Amount of bulk storage.
5. Amount of warehouse storage.
6. Approximate amount of money available for project.
7. Special processes needed, and rates, for such as crimping, cutting, pelleting, etc.
8. How much present equipment can be used.
9. Liquids required.
10. Power, water, gas, steam and compressed air available.
11. Plot plan of property.

Assuming that all this is known the question of type of flow and equipment is usually next up. You can select either horizontal or vertical batch mixers or a continuous line-feeder system (or combination batch-line mix). With some notable exceptions, most custom plants, concentrate plants and small mixing plants of 5 tons per hour or less use vertical mixers because of their lower cost.

In the 5 to 10 ton per hour range, both vertical and horizontal mixers are in wide use. From 10 to 25 tons per hour, horizontals predominate, usually 2-ton or 3-ton size, with surge bins underneath and bulk bins with weighing scale over the mixers.

Above 25 tons per hour "line-feeder" systems come into wide use, although there appear to be as many horizontal batch systems even in these larger mills. About 50 to 60 tons per hour seems to be the practical limit for any given line or system, and the very large mills usually involve several complete systems in parallel.

Helpful Suggestions: While we cannot go into extensive detail on specific mill design, I would like to mention a few things that may be helpful:

1. Elevate bulk materials as few times as possible, using maximum gravity flow.

2. Keep traffic pattern of incoming ingredients, through plant, and on to finished storage and shipping as orderly and straight-line as possible.

3. Try to put molassifying equipment up high, to prevent need for re-elevating molassified feeds.

4. Keep in mind future expansion room for bins and equipment. Most plants can be arranged for from 100 to 200% capacity increase in future. At the same time, these provisions cost you money while waiting on volume to expand, and you can get "overloaded" with future expansion room. The result usually is that it is better to plan for a new plant when business expands more than about 200%.

5. The same thing applies to flexibility. It is at once an advantage and an evil. All the flexibility that can be obtained at little or no additional cost over basic needs is desirable. When it starts requiring more mill height and substantial expense to put you in position to do something that is just a vague future possibility, it is well to take a second look. Some experiences of older mills in having to make numerous changes to make new products or handle new ingredients have produced almost a mania for flexibility. We still feel there is definitely a range beyond which you can't afford to go, and that it is reached much sooner than most mills generally realize.

6. Both the above points are tied directly to the number of formulas. Here again we find some medium and large mills losing money on short runs of 5 or 10 bags of a pelleted or special formula. One of the great savings that can be made in mill design and operating cost is by cutting the number of formulas and runs per day to a minimum. We all know sales pressures have to carry a lot of weight, but what good is volume at a loss?

7. The kind of mill you build to make a given set of products must vary to suit certain ownership and operating conditions. Two totally different plants may still be best in their case, even though the products and volumes are the same. In fact, a mill is about as individual as people. A streamlined low-cost construction, requiring minimum storage and equipment, may be best for a one-man owner-operator management who gives maximum supervision of detail. Higher cost construction with more elaborate automatic features and larger storage, etc., may be best for a mill operated by a large organization where management transfers and labor turnover can be high and the minute familiarity with detail is not possible. A miller owning a steel fabricating business would not likely build with concrete or wood, where one with large timber holdings may come out best on wood construction on a medium or small mill. This all means that there does not seem to be just one right combination for a mill to do a given job. In fact, we have yet to find two alike in this area.

Mill Costs: Here is some information on things that affect mill cost, some mill cost ranges and cost ranges on bulk feed facilities.

1. Some Things That Affect Mill Cost:

(a) Type of Construction. Triple A fireproof concrete construction usually cuts insurance costs sharply, compared to all steel, fire-resistant or, of course, to wood. The added cost of concrete, especially in small mills, must be weighed against the insurance savings. We prefer steel construction for most medium and small mills (5 to 30 ton/hour range) from an overall flexibility and cost standpoint. In larger mills over 30 tons/hour, where from 1,000 to 2,000 tons of storage is involved, most mill designers and builders prefer slip-form concrete, as it becomes less costly and flexibility is not so important.

(b) Location. A mill in a large city can cost up to 50% more per ton of capacity than a mill in the outlying country areas. Biggest factors are building codes, insurance regulations and property values.

(c) Types of Feed to be Made. A mill to produce 10 to 20 tons/hour of a single feed such as poultry or dairy with perhaps one formula making up 50 to 90% of the total output, can often be built for something like half the cost per ton of capacity that an all-purpose mill will cost.

(d) Number of formulas to be made.

(e) Quantity and number of bulk ingredients to be used daily, weekly and annually.

(f) Quantity and number of bulk ingredients to be stored at any one time.

(g) Distance from sources of ingredients.

(h) Quality of machinery and equipment used and quality of building workmanship and materials.

(i) Type of system, whether automatic, semi-automatic, or manual.

(j) Amount of warehouse space required.

(k) Bulk finished feed storage required.

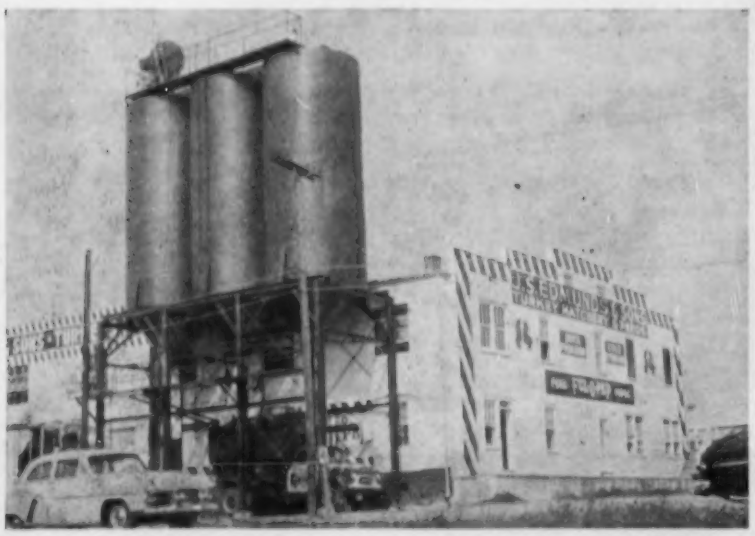
2. Some Mill Cost Ranges: Keeping in mind all of the above variables, we have summarized in Table 1 some cost ranges for various types of mills used in the Southeast.

3. Some Cost Ranges on Bulk Feed Facilities:

(a) Mill Bins. For small steel bins ranging from 5 tons up to 30 tons, for storing ingredients over mixer, or for finished feed, the cost per cubic foot installed will range from $1.25 to $2. For larger bins up to 100 to 200 tons, steel will run from $1 to $1.50 per cubic foot, where concrete may run from 75¢ to $1.25/cubic foot. It is difficult to completely isolate the cost of the bin from the mill building cost since in most cases the bin must be supported from the building, and in the case of concrete is poured integrally. However, as a rule of thumb for estimating mill bins built into the building, we use around $1.50/cubic foot and add the cost of the building required to house the bins. This averages out from $100 to $200 per ton of storage, installed, depending on density of ingredients and type of construction.

(b) Bulk Depots. The vast increase in bulk handling of poultry feed in the Southeast has brought in many bulk depots of from one or two 10- to 25-ton bins, on up to several 50- to 60-ton bins per cluster.

(Mr. Stivers described a number of bulk depot installations, including (1) An 80-ton (4@20 each) cluster bin supported over a hopper scale, for direct weigh-up to truck; feed may be received either by rail or truck. (2) A 200-ton (4@50 each)



This is a bulk installation for Quaker Oats at J. S. Edmunds & Sons, Clover, S.C., showing three 50-ton bins mounted over a 100-ton railroad scale. The scale is used for weighing inbound hopper cars as well as outgoing bulk trucks. This is a turkey feed installation, primarily for pellets and crumbles in three formulas, with a receiving rate of approximately 30 tons per hour and a load-out rate of about 10 minutes per 9-ton truck.

TABLE 1. Cost Ranges of Various Types of Mills in Southeastern U.S.

		——SMALL—— (50 tons/8 hour day)		——MEDIUM—— (150 tons/8 hour day)		——LARGE—— (500 tons/8 hour day)	
		Total cost in $1,000	$ Cost per ton per day	Total cost in $1,000	$ Cost per ton per day	Total cost in $1,000	$ Cost per ton per day
(a)	"Multi-feed" all purpose	55 to 120	1,100-2,400	175 to 325	1,200-2,200	500 to 900	1,000-1,800
(b)	"Single feed"	20 to 75	400-1,500	100 to 200	600-1,200	(not common)	.....
(c)	Concentrate and corn for poultry feed	15 to 50	300-1,000	50 to 150	300-1,000	(not common)	.....
(d)	Custom grinding and mixing	15 to 50	300-1,000	50 to 150	300-1,000	(not common)	.....
(e)	Custom grinding, mixing and shelling	25 to 75	500-1,500	100 to 200	600-1,200	(not common)	.....
(f)	Stationary Package custom mills (20 tons/day)	12 to 25	600-1,200	not used	.....	(not used)	.....
(g)	Portable custom mills (20 tons/day)	12 to 20	600-1,000	not used	.....	(not used)	.....

A bulk depot installation for Aubrey Feed Mills at Acworth, Ga., including two 50-ton bins, for rail and truck receiving. The depot operates at a 50-ton-per-hour receiving rate and a load-out rate of 5 minutes per 9-ton truck.

installation, with bins on the ground, and augering into a hopper scale over truck level; a truck platform scale may also be used. (3) A 150-ton (3@50 each) installation with bins supported over a railroad scale which is used for receiving and weighing out. (4) A 100-ton (2@50 each) installation with bins supported high over a traveling hopper scale, on track and rollers; receiving is by rail or truck. (5) Another traveling hopper scale arrangement for 150 tons (6@25 each).

(Also see the accompanying pictures of some of Mr. Stivers' bulk depot installations.)

The installed cost of these facilities runs from about $150 to $200 per ton, including receiving and weighing equipment, for gravity loading, and from $125 to $150 per ton for auger loading. Where pellets and crumbles are being handled, gravity loading seems to be worth the increased cost to cut down breakage.

(c) Poultry House Bins. For receiving bulk feed in 3,000 to 6,000-bird broiler houses, the popular bins seem to be of steel, and either 3 or 4 tons in size, located inside the houses. For layer houses and larger broiler houses, many operators like the larger outside bins running from 4 up to 10 tons, with 3½" or 4" augers through the wall into the house. Three-ton inside bins (no roof) range from about $75 up to $110, and four-ton from about $90 to $130 each, all knocked down, f.o.b. factory. The larger outside, round bolted type bins, run approximately $265 for the 4-ton with auger and motor, up to $325 for the 10-ton bin complete, all f.o.b. factory. As you see, the cost per ton is much less in the larger bins, since the added cost is only about $10 per ton over the base 4-ton bin price.

This photo was taken at a bulk installation for the Ralston Purina Co. at Birmingham, Ala. The installation includes six 25-ton square bins over a traveling hopper scale.

OPERATING COSTS

Some Things That Affect Operating Costs:

1. Volume. Capacity of the plant is the biggest single factor, on the average, in total operating cost. As we will see later, however, other factors can overshadow volume differences.
2. Operating time.
3. Managerial decisions.
4. Labor rates.
5. Equipment.
6. Number of formulas.

Items That Are Usually Included in Operating Costs:

1. Purchasing.
2. Production, including handling, storing, mixing, processing, warehousing.
3. Selling.
4. Overhead.

Study of Typical Operating Costs in U.S. Mills: A very informative study was published in 1955 by the USDA, entitled "Costs of Operating Selected Feed Mills," by John Brensike and William Askew. The study was conducted in cooperation with the AFMA, and approximately 126 mills in four general areas of the U.S. were analyzed. It is well worth any feed miller's time to study this report with respect to his own operation. I have summarized very briefly and generally some of the data in the accompanying tables, which will give you an idea of the tremendous spread in operating costs between mills and how your mill stacks up with the averages.

From Table 2 we see that the average cost of producing a ton of feed in a 45,000-ton mill is about $7 less than for a mill below 5,000 tons. Better management, equipment, labor rates, etc., may in specific cases result in a lower cost per ton in the small mill. However, assuming that in such a large sample the differences in management and other factors would offset each other, it appears that volume is the biggest basic factor influencing operating cost per ton. In fact, the study concluded that volume accounted for about 63% of the variations between plants in the per ton cost for wages and salaries used in production. The other large factor in determining overall operating cost was found to be managerial decisions. It was difficult to isolate all the effects of this factor, and the authors

TABLE 2. Total Approximate Operating Costs of Three Ranges of Mills by Size.

	Cost in $ per ton produced*		
Size of mill	Under 5,000 tons/yr.	15,000 to 25,000 tons/yr.	Over 45,000 tons/yr.
Item:			
Wages and salaries:			
Production	$ 7	$ 4	$ 3
Other	3	3	2
Total	10	7	5
Fixed costs	5	3	2
All other costs	1	2	2
Total	$16	$12	$ 9

*To nearest dollar.

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recommended further study. They pointed out that increased volume for some managerial groups, just as for mills in some market areas, would not necessarily cut the per ton operating cost.

Study of Labor Costs: Table 3 shows that the biggest single factor in operating costs, by far, is labor. Wages and salaries make up approximately 60% of total operating cost. Further, wages and salaries paid to production people alone make up about 40% of total operating costs. For this reason, the Midwest Feed Manufacturers Assn. singled out production labor costs for its study conducted last year for the Feed Production School by the Midwest Research Institute.

Table 4, condensed from this study, shows the approximate labor costs for the various production operations.

Table 4 shows that the biggest labor factor is warehousing, running from 32 to 37% of the total labor cost in any size mill that is using pallet and fork truck systems. Warehousing costs twice the percentage spent for mixing (about 15%), or for maintenance (about 15%). We must be careful to note, though, that these figures are for model mills, and as we will see later, the actual labor being used by U.S. mills is considerably more than the model mill figures. Therefore, in our own mills it is quite possible that receiving, mixing or maintenance or some other operation may be the largest labor cost. This could especially be true if we have just spent money on general warehousing facilities to put them on a belt conveyor basis, where the rest of the mill is less modern. In fact, in my opinion, the high percentage for warehousing cost in the Midwest Research Study should definitely not be assumed applicable to mills who are not bulking most of all their incoming ingredients and who do not have fully mechanized mixing systems. In other words, as other cost percentages increase, warehousing percent declines in importance. These latter mills may well be spending equally as much in getting ingredients into the mill and through the mixers as they are in handling finished product. In these mills, it is sometimes much easier to cut labor costs by installing bulk ingredient facilities than by improving the warehousing.

A thorough analysis of your mill using the technique outlined in the Midwest research study, with appropriate changes to adapt to your special conditions, will be a profitable expenditure for any mill.

Table 5 gives a summary comparison of Tables 3 and 4, showing that in actual practice, on a broad average, mills are using from two to three times as much labor as they should be, regardless of size. Since size is accounted for in the Midwest research study, it would appear that the high labor costs are due primarily to equipment differences.

An interesting observation in the USDA study was that in the southern mills, man hours per ton ran from 30 to 50% more than in other areas. At the same time, the lower labor rates in the South tended to offset this, and overall labor costs were comparable. With labor rates tending to equalize rapidly over the U.S., it would seem important that southern mills, to remain competitive, cut their man hours per ton used in production.

The results of all these studies point up the great need for more intelligent research and development programs with proper facilities and backing, in the feed industry. Some typical problems that we hear a lot about are:

1. Mysterious variations in weather, formulas, die condition, ingredients, etc., that drop a pellet mill from 10 tons to 2 tons per hour overnight, and then correct themselves.
2. Liquids that cause shot balls in the finished feed.
3. How to incorporate bulk handling into older type mills.
4. Micro-ingredient mixing.
5. Warehousing techniques.

Until recently most research of this type was conducted by individual mills or machinery companies themselves, on a limited basis, for their exclusive information. The AFMA, Midwest, USDA, Kansas State College, along with many state colleges and experiment stations, have started extensive programs. To be practical, these have to be tied closely to the mill, rather than the laboratory, although much laboratory work is involved.

Therefore, if mills in any area make progress, it must come mainly through joint efforts of state groups such as the Georgia Feed Assn., properly coordinated on a national scale. If we are going to improve our own mills and know where to spend our money to bring the best return, we could well afford to invest more money and qualified men in research and development on state and national levels.

TABLE 4

Mill Capacity in Tons Per 8 Hours

		——100 Ton——		——200 Ton——		——30 Ton——	
		Man hrs. per ton	% of Total man hrs./ton	Man hrs. per ton	% of Total man hrs./ton	Man hrs. per ton	% of Total man hrs./ton
			%		%		%
I.	Receiving	.080	8.3	.071	8.8	.162	9.0
II.	Processing	.019	2.0	.008	1.0	.038	2.1
III.	Mixing	.145	15.0	.122	15.2	.341	19.0
IV.	Pelleting	.075	7.7	.046	5.7	.119	6.6
V.	Packing	.109	11.2	.087	10.8	.176	9.7
VI.	Warehousing	.309	32.0	.264	32.8	.671	37.3
VIII.	Maintenance	.150	15.5	.126	15.7	.160	8.9
	Sub total	.887		.724		1.666	
	Foreman	.080	8.3	.080	10.0	.133	7.4
	Total	.967	100.0	.804	100.0	1.799	100.0
VII.	High molasses feeds	.212		.216		.369	

TABLE 5. Total Approximate Operating Costs of Three Ranges of Mills by Size.

Size of mill	Man hours per ton Under 5,000 tons/yr.	15,000 to 25,000 tons/yr.	Over 45,000 tons/yr.
Man hours in production	5.69	2.26	1.90
(Model mill) man hours in production	1.80	.97	.80

TABLE 3. Total Approximate Operating Costs of Three Ranges of Mills by Size.

Size of mill	Percentage of total cost Under 5,000 tons/yr.	15,000 to 25,000 tons/yr.	Over 45,000 tons/yr.
Item:	%	%	%
Wages and salaries:			
Production	41	37	35
Other	16	24	19
Total	57	61	54
Fixed costs	34	23	23
All other costs	9	16	23
Total	100	100	100

Possibility of Asian Flu in Swine Studied

URBANA, ILL.—A possibility that Asian influenza may spread to swine is being investigated by University of Illinois veterinarians, according to an announcement from the Illinois Agriculture Experiment Station.

The university's College of Veterinary Medicine is cooperating in the study with the U.S. Public Health Service and the World Health Organization to determine whether animals are involved. The virus causing human influenza is related to the virus causing influenza in swine, and human influenza antibodies have been found in swine and horses throughout the world.

"Most authorities believe that the 1918 influenza pandemic spread from man to swine," the college said. "Health authorities are very much interested in getting more information on the relation between animal and human influenza. With this purpose in view, veterinarians at the university are collecting samples of swine and horse blood serum in cooperation with the Illinois department of health and the Illinois department of agriculture."

Because many diseases found in man are also encountered in animals, the college said, veterinarians are able to study naturally occurring diseases in animals before results are applied in human medicine.

Oregon Feed, Seed Men Schedule Show

PORTLAND, ORE.—Dates for the seventh annual Northwest Garden Supply Trade Show sponsored by the Oregon Feed & Seed Dealers Assn. have been set for Oct. 29-30, announces Frank Stewart, Miller Products Co., Portland, general chairman.

The event is said to be the only show of its kind on the Pacific Coast, and is designed to bring retail stores abreast of the latest techniques in merchandising garden supply lines. The show will be held in the Grand Ballroom, Masonic Temple, Portland, and will highlight 55 booths.

Retailers throughout the area are invited to attend a three-a-day sales promotion clinic where experts will advise on garden supply store merchandising, advertising, window and floor displays and customer relations.

Show planners anticipate a record attendance of more than 1,100 persons from Oregon, Washington, Idaho, Montana and California.

Named Manager

GREENSBURG, KANSAS — Earl Cannon, Hutchinson, Kansas, has been named manager of Security Elevator Co. here. He succeeds Roy Schmidt, who resigned his post with Security to take a place with Pratt (Kansas) Equity. Mr. Cannon has been an assistant manager with Security Elevator at Hutchinson the past six years.

To Test Acceptance Of Meat from Cattle Fed Only Grass, Hay

FORT COLLINS, COLO. — Some cattle feeding research with potential effects on the feed business was noted recently by Colorado State University.

"Grass finishing of beef may open an important new market for cattle in the Rocky Mountain area," a college report said. "If consumers like the flavor, tenderness and lower price of meat from grass-fed cattle, a new method of beef production will be open for mountain ranchers."

Beginning this fall, scientists from the Colorado Experiment Station and the U.S. Department of Agriculture, in cooperation with the Northwest Mountain Meadow Research Corp. and local ranchers, will conduct feeding tests to fatten young cattle on grass and hay alone. This ration will be fed until the animals are ready to go to market.

Weaner calves from selected herds in the Steamboat Springs and Hayden areas will be fed out at the Farrington Carpenter ranch near Hayden.

When ready for slaughter, the researchers said, the cattle will be sold to the National Tea Co. of Chicago. This firm will distribute and retail the meat, following up with a consumer survey to see how homemakers compare meat of grass-fed cattle with that of grain-fed animals.

"Recent tests on the Carpenter ranch," the report said, "proved that a 1,000-lb. heifer from high quality stock can be raised in 15 months on grass forage alone. The new experiment is an effort to evaluate consumer reaction to meat from cattle that have received a grass ration without the use of supplements."

Test Antibiotics in Deficient Rations

MADISON, WIS.—Some antibiotics were more effective than others in supplementing chick diets low in folic acid in University of Wisconsin tests.

The researchers said that two of the most effective were albamycin, a new antibiotic, and chloromycetin, which in previous trials has given poor results when added to complete diets. When they were added to rations deficient in folic acid, the albamycin gave a 49% increase in growth and the chloromycetin gave a 35% increase. Bacitracin gave a 16% increase. Increases with penicillin and Aureomycin were lower.

When added to a complete diet, albamycin, Aureomycin and penicillin gave about equally good results, the researchers said.

The scientists pointed out that practical feeds contain plenty of folic acids, so the findings with diets low in folic acid do not affect current practices. The experiments are being continued in the hope that they will help show how antibiotics may bring increased growth.

HONORED BY MASONS

WILMINGTON, DEL.—W. Harrison Phillips, Laurel, Del., feed man, was elected grand master of Masons in Delaware recently at the closing session of the Grand Lodge. He has long been active in Masonic circles.

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UP OR DOWN?

By Leonard W. Schruben

Agricultural Economist, Kansas State College

Hay Outlook

A record U.S. hay crop is being entered into the books this year. And of course, the amount and quality available has a direct bearing on the market for manufactured feeds. Not only will you be competing with lower priced grain, but there will be less substitution of manufactured feeds for roughage except in the drouth area in the northeastern part of the country.

From an over-all point of view, there is plenty of hay for the year ahead. However, some of the feed dealers in the drouth area of the East would do well to review the experience of dealers in the Southwest in recent years. In some cases additional business can be done as you help the farmer adjust to higher priced roughages. In some cases you may be able to suggest combinations which will reduce his feed bill as well as build volume for you.

EXHIBIT 1. Trend in hay production in the U.S., 1930-57.

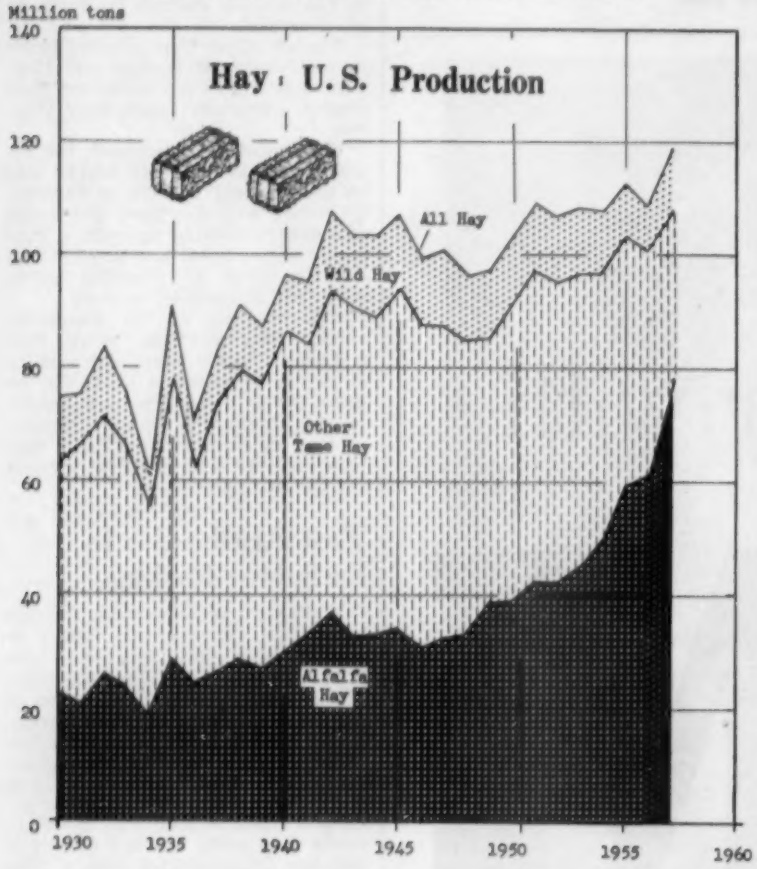

EXHIBIT 2. Roughage-Consuming Livestock: Total animal units fed annually, U.S., 1930-1957.

Year beginning October	Animal units fed 1,000 units
1930	82,776
1931	84,795
1932	88,206
1933	91,932
1934	86,082
1935	84,604
1936	82,741
1937	81,145
1938	81,603
1939	83,472
1940	86,414
1941	90,350
1942	94,512
1943	97,209
1944	95,631
1945	91,386
1946	88,077
1947	83,977
1948	82,096
1949	82,381
1950	85,592
1951	90,175
1952	94,567
1953	95,664
1954	96,153
1955	96,034
1956	93,971
1957*	91,700

*Preliminary.

Production Trend Up

The general trend in hay production in the U.S. has been upward. Since 1930 alfalfa hay tonnage has nearly tripled. Other hay has also increased but not as much in proportion. These trends are shown in Exhibit 1.

The number of hay-consuming animal units is expected to decline again this year. This is a continuation of the current downward trend. The number since 1930 is shown in Exhibit 2.

Based on the above estimates, hay supply per animal unit would be about 11% larger than last year and 12% larger than the five-year average.

Price Trends

As far as alfalfa hay prices are concerned, it now appears likely that they will not advance quite as much during this coming season as is the usual case, although prices are almost always higher in January by at least several dollars a ton than in July and August. Of course, if we have a mild winter and wheat pasture turns out to be excellent, we can expect less upward pressure on alfalfa and prairie hay prices in the wheat area than is the usual case. However, prices almost always advance into the winter months, even with excellent wheat pasture.

The average price of hay this coming season is expected to be somewhat below that of last year. There, of course, is considerable variation in different parts of the country from these prices. In Kansas we have experienced considerably higher prices than the national average because of the drouth and general shortage of roughage the last several seasons. It now would appear that Kansas prices will be more nearly held to the traditional relationship with the nation's average than for several years. The reverse may be true in the Northeast.

One thing to remember is that hay prices usually vary a great deal from one area to another. This is because hay is bulky and difficult to move.

Stockton Elevators Expands Drying Plant

STOCKTON, CAL. — New grain drying facilities have been completed at the Stockton Elevators near the Port of Stockton here, at an estimated cost of about $200,000.

The new facilities include four elevator legs, three 50-ft. grain driers, a 60-ft. long hydraulic truck hoist and related conveying equipment.

Jack Hurley, manager, said that the demand for drying facilities has increased steadily in the past two years. The new set-up, which can handle 2,000 tons of grain daily, is almost double the previous drying capacity.

FORMAL OPENING

WARSAW, VA.—A 30,000-bu. grain elevator completed by Southern States Cooperative had its formal opening recently. The new facility, built at a cost of more than $100,000, has an unloading capacity of 2,000 bu. an hour.

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CONVENTION CALENDAR

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

Oct. 22-23—Indiana State Poultry Assn.; Hotel Antlers, 750 N. Meridian St., Indianapolis, Ind.; sec., Robert L. Hogue, Poultry Bldg., Purdue University, Lafayette, Ind.

Nov. 15—Washington Animal Industry Conference; Western Washington Experiment Station, Puyallup, Wash.; chm., Walter Krumbholz, 841 Second Avenue Bldg., Seattle 4, Wash.

Feb. 10-11—Poultry & Egg National Board; Bismarck Hotel, Chicago; mgr., Lloyd H. Geil, 19 S. Fifth St., St. Charles, Ill.

1957

Oct. 21-22 — Tennessee Poultry & Egg Federation; Andrew Johnson Hotel, Knoxville, Tenn.; sec., Dr. O. E. Goff, University of Tennessee Poultry Department.

Oct. 21-22—California Animal Industry Conference; Memorial Auditorium, Fresno, Cal.; chm., Emery A. Johnson, Box 23415, Lugo Station, Los Angeles 23, Cal.; sec., California Hay, Grain & Feed Dealers Assn., John F. Gilmore, 1400 Tenth St., Sacramento 14, Cal.

Oct. 21-23—Tennessee Poultry Federation convention; Knoxville, Tenn.

Oct. 22-23—Indiana State Poultry Assn.; Hotel Antlers, Indianapolis, Ind.; chm., Robert L. Hogue, Poultry Building, Purdue University, Lafayette, Ind.

Oct. 24-25 — Oklahoma Formula Feed Conference; Oklahoma A&M College, Stillwater; chm., Dr. Rollin Thayer, Poultry Husbandry Department.

Oct. 25—Illinois Sheep Production Day; University of Illinois, Urbana; chm., Dr. E. E. Hatfield, 110 Stock Pavilion, Urbana, Ill.

Oct. 27 - Nov. 2 — Southeastern School of Management for the Poultry Industry (third session); University of Georgia, Athens, Ga.; sponsored by the university and Southeastern Poultry & Egg Assn., 615 E. Franklin St., Richmond 19, Va.

Oct. 28-30 — Mississippi Poultry Improvement Assn.; Biloxi, Miss.

Oct. 31-Nov. 1—Cornell Nutrition Conference for Feed Manufacturers; Statler Hotel, Buffalo, N.Y.; chm., Prof. J. K. Loosli, Stocking Hall, Cornell University, Ithaca, N.Y.

Nov. 1—Rooter's Day, College of Agriculture, University of Nebraska, Lincoln, Neb.

Nov. 1 — Illinois Cattle Feeders Day; University of Illinois, Urbana; chm., Dr. A. L. Neumann, 110 Stock Pavilion, Urbana, Ill.

Nov. 5-6—Missouri Formula Feed Conference; University of Missouri, Columbia.

Nov. 5-6-7—Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis; sec.-treas., L. L. Baumgartner, Litchfield, Minn.

Nov. 7-8 — Florida Nutrition Conference; University of Florida, Gainesville; chm., J. P. Feaster, Department of Animal Husbandry and Nutrition.

Nov. 13-14—Illinois Feed Assn. and Illinois Poultry Improvement Assn., joint convention; Leland and St. Nicholas Hotels, Springfield, Ill.; sec., Dean M. Clark, Room 1115, Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill.

Nov. 17-18—Tennessee Feed Manufacturers Assn.; Peabody Hotel, Memphis, Tenn.; exec. sec., W. H. Levine, 200 Baxter Bldg., Nashville, Tenn.

Nov. 20-22—Midwest Feed Production School; Municipal Auditorium, Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. v.p., Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 22-27 — North Carolina Feed Manufacturers Assn. and allied group convention-cruise to Nassau; chm., W. G. Crawford, Goldsboro Milling Co., Goldsboro, N.C.

Nov. 25-26—Western Grain & Feed

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1958

Jan. 6-7 — Kansas Formula Feed Conference; Kansas State College, Manhattan, Kansas; chm., Prof. F. W. Atkeson, Department of Dairy Husbandry.

Jan. 7-9—National Turkey Federation; Keil Auditorium, St. Louis, Mo.; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 10-11 — Kansas Seed Dealers Assn.; Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

Jan. 19-21—Indiana Grain & Feed Dealers Assn.; Hotel Claypool, Indianapolis, Ind.; sec., Fred K. Sale, Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 21-22—N.D. Poultry Industries Convention; Elks Club, Fargo, N.D.; chm., B. J. Duke, Poultry Improvement Board, Bismarck, N.D.

Jan. 22-25—Boston Poultry Show; Mechanics Bldg., Boston, Mass.; sec., Alfred Van Wagenen, Northeastern Poultry Producers Council, 10 Rutgers Place, Trenton, N.J.

Jan. 23-25—New Mexico Grain & Feed Dealers Assn.; Town House Motel, Santa Fe, New Mexico; asst. sec., Parley G. Jensen, P.O. Box 616, Albuquerque, N.M.

Jan. 27-29 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; headquarters hotel, Dinkler Plaza; exec. sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Jan. 31-Feb. 1 — Minnesota Turkey Growers Assn., Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul 14, Minn.

Feb. 3-5—Association of Southern Agricultural Workers; Hotel Marion, Little Rock, Ark.

Feb. 6-7—New Hampshire Poultry Health Conference; University of New Hampshire, Durham; chm., W. C. Skoglund, Poultry Husbandry Department.

Feb. 6-7—Oregon Animal Industry Conference; Oregon State College, Corvallis, Ore.; gen. chm., Fred West, Oregon Feed & Seed Dealers Assn., college chm., Dr. J. E. Oldfield, Department of Animal Husbandry.

Feb. 6-8 — American Dehydrators Assn., Broadmoor Hotel, Colorado Springs, Colo.; exec. v.p., Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 13-14—Utah Feed Manufacturers & Dealers Assn., Convention and Nutrition Conference; Utah State University, Logan, Utah; sec., Dr. J. O. Anderson, Utah State University, Logan, Utah.

Feb. 13-14 — Washington State Feed Assn.; Chinook Hotel, Yakima, Wash.; sec., J. G. Wilson, 814 Second Avenue Building, Seattle, Wash.

Feb. 14-16—Institute of American Poultry Industries Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; sec., Dr. Cliff D. Carpenter, 221 N. LaSalle St., Chicago 1, Ill.

Feb. 23-25 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo, Ohio; sec., G. E. O'Brien, Ohio St., Greenville, Ohio.

Feb. 23-25 — Colorado Grain, Milling & Feed Dealers Assn., Shirley-Savoy Hotel, Denver; sec., R. B. Kelley, 714 Cooper Bldg., Denver 2, Colo.

Feb. 24-27 — Colorado Livestock Days; Colorado State University, Fort Collins, Colo.; sec., Dr. Sherman S. Wheeler, director of the experiment station.

Feb. 25-26 — Virginia Polytechnic Institute Nutrition School for Feed Men; Hotel Roanoke, Roanoke, Va.; chm., Paul M. Reaves, professor of dairy science.

Feb. 26-28 — Midwest Feed Manufacturers Assn.; Muehlebach Hotel, Kansas City; exec. v.p., Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

March 12—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; exec. dir., Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

March 13-14—Oregon Feed & Seed Dealers Assn.; Multnomah Hotel, Portland, Ore.; sec., Fenn Emerson, Albany, Ore.

March 20-21—University of Maryland Nutrition Conference, Shoreham Hotel, Washington, D.C.; Dr. G. Lynn Romoser, Department of Poultry Husbandry, University of Maryland, College Park, Md.

April 17-19—California Hay, Grain & Feed Dealers Assn., Ambassador Hotel, Los Angeles; chm., Forrest Corzine, Charles T. Taylor Co., Los Angeles.

May 1-3 — Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

May 4-5—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 18-23—Grain Elevator & Processing Superintendents; Minneapolis, Minn.; sec., Dean M. Clark, 1115 Board of Trade Building, Chicago 6, Ill.

May 21-23—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

June 1-3 — Indiana Grain & Feed Dealers Assn., mid-summer convention, French Lick-Sheraton Hotel, French Lick, Ind.; exec. sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 8-10 — Eastern Federation of Feed Merchants; Whiteface Inn, Whiteface, N.Y.; exec. dir., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 10-12 — Alabama Poultry Industry Assn.; Auditorium, Birmingham, Ala.; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

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Create new year-round volume with this new idea in feeds

5-DAY CONDITIONING FEEDS

containing Terramycin

There's a year-round market for this premium-profit, specialty feed—the new 5-Day Conditioning Feed containing Terramycin.

Prime market is for control of Shipping Fever Complex—a stress-induced disease which can hit any time of the year and can range in severity from runny noses to terminal Pneumonia.

Tests show this new Terramycin feed can prevent up to 80% of Shipping Fever losses and reduce the need for additional, individual treatment by up to 83%. What's more, it can help reduce bloat, prevent shrink, treat or prevent scours and condition calves for faster gains in feedlot or pasture.

These powerful sales benefits create peak sales potentials at any time of the year when stress, handling or extreme changes in weather can be expected. This includes shipping to feedlot or market, spring or fall roundup, castrating, dehorning, branding, vaccinating, moves to spring, fall or winter grazing and during fall, winter or spring weather changes.

This new stress-fighting feed has a place in your line. See your Pfizer representative for full details.

Boost sales with increased gains and feed efficiency of

GROWING and FATTENING SUPPLEMENTS

containing Terramycin

Here's a proven way to increase your beef-feed sales and profits. Add the benefits of Terramycin to your feedlot supplements, growing rations, pasture supplements, range cubes and creep or calf starter feeds. You'll profit three ways:

Greater customer-winning performance from your feeds. Feedlot reports show Terramycin can increase feed efficiency 6 to 9%; gains, an average of 8%. Gains are in addition to those promoted by stilbestrol . . . with high- or low-roughage rations.

More profit-making repeat sales from improved quality. At market time, feeders reported better bloom, improved carcass quality, better grade and dressing percentages—especially with steers getting stilbestrol.

More sales appeal from bonus benefits. Feeders using Terramycin reported less bloat, liver abcesses and foot rot. They also said cattle made better use of home-grown grains, with less showing up in the manure.

Add a Terramycin-fortified supplement to your line for '58. See your Pfizer representative soon. Ask him for complete details on formulation, approved feed tag claims and market information.

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TESTS WITH OVER 30,000 ANIMALS PROVE TERRAMYCIN CONTROLS SHIPPING FEVER

	CONTROL	TERRAMYCIN
Number of Animals	16,936	13,162
Animals Requiring Additional Treatment	936	87
Number per 1,000 head	55	12.8
Mortality, Number of Animals	169	21
Number per 1,000 head	5.1	1.6

Animals requiring additional treatment were cut by over 80%.
Death losses were cut by over 80%.
Total weight gains were higher in the Terramycin groups . . . animals continued to make good, healthy gains.

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New Poultry House To Aid Beltsville Turkey Research

WASHINGTON — Research to determine how environment affects fertility in turkeys will be aided by a newly constructed poultry house now being equipped at the Agricultural Research Center, Beltsville, Md., the U.S. Department of Agriculture announces.

The new building is expected to be ready for the housing of experimental turkey flocks about mid-December, approximately at the beginning of the breeding season. It will be used by USDA poultry scientists for continued studies of the effect of light and other environmental factors on male turkey fertility.

Designed by USDA engineers, the structure embodies facilities that will enable the poultry scientists to provide any "climate" required for turkeys in various experiments.

Positive means of controlling light, temperature and humidity have been installed in the experimental building. Three heat pumps will provide air-conditioning, winter and summer. These will operate singly or simultaneously to provide either heat or refrigeration.

Conditioning Studies

In addition to its usefulness in continuing studies of the effect of light on male turkey fertility, the new building will serve another purpose. It is expected to help scientists learn how its mechanical and electrical equipment can best be used to provide the exact "weather" conditions needed for different experiments. The poultry industry in particular, and the livestock industry generally, is becoming aware of the potential usefulness of controlling animal environment for more efficient production, the USDA said. The experiments conducted in this building are to seek clues for design of poultry and livestock shelters of the future.

Conditioning equipment has been designed to accommodate a 50° temperature differential. This means that temperatures inside the building, which will probably be kept at 60-65° F., can be held constant even though the outside temperature may be as much as 50° warmer or colder.

Previous studies at Beltsville on the effect of light on male turkeys have shown that the amount and duration of light greatly influence the amount and quality of semen produced. Little semen is produced during the short days of mid-winter, but production increases as the days become longer.

USDA researchers have also found, however, that too much light may result in seriously reduced semen production and even sterility. Their studies indicate so far that best results are obtained by extending natural daylight for turkey toms to a total of 13 to 15 hours by the use of 1.5 to 2.5 foot-candles of artificial light.

DOES IT TAKE LIGHT TO MAKE MILK?

FT. COLLINS, COLO.—Do cows have to see to eat, or do they grope around in the dark for their extra bites? Are longer days part of the reason for greater milk production in the summer months? Scientists at Colorado State University want answers to these and several other questions, so they are starting an experiment to see if night lighting will influence milk production or growth of dairy cows. Electric lights are being installed at the new dairy feedlots southwest of here. In one area, the lights will be kept on for several hours after sundown. The controlled group will receive only light provided by the sun. Dr. Gerald Ward, associate dairy husbandman, and Ralph W. Hansen, assistant agricultural engineer, note that extending the daylight hours in poultry houses increases egg production, so they wonder if it will have a similar effect in the dairy barn. The Colorado Farm Power Council, made up of representatives of the electrical industry, is cooperating in the project by furnishing the lighting equipment.

Kent Family Picnic

MUSCATINE, IOWA—More than 800 chickens were served to 1,600 employees of Kent Feeds, Inc., Muscatine, Iowa, and their families at a recent family picnic. The Iowa Poultry Improvement Assn. did the barbecuing and serving, and varied entertainment was provided for the picnickers.

AUBREY FEED MILLS
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LOUISVILLE, KENTUCKY
SERVING THE GREAT SOUTHEAST

THEY SAY IT'S "THE GREATEST"

Users (and operators who have seen demonstrations) think the TRIPLE is terrific. The TRIPLE has *all* the features of the great 16, 20 and 24-inch SECO *single* and *twin* Hammermills, including the largest rotor, strongest shaft and heaviest duty bearings on this type Hammermill—plus largest screen area for size of mill, and the exclusive TRIPLE gives even greater capacity . . . with *greater economy* per horsepower. Costly demand charges are substantially reduced, *yet horsepower can be nearly doubled* (especially important in areas with limited power supply). Three motors help eliminate costly repair shut-downs.

When you consider the outstanding advantages of the SECO Hammermill, combined with new triple power units . . . and the fact that the TRIPLE is priced right in line with single powered Hammermills . . . it's no wonder that the TRIPLE is fast becoming known as the greatest mill in the industry.

E. E. Campbell
Vice-Pres. & General Sales Mgr.

SECO
triple-powered HAMMERMILL

3
SEPARATE MOTORS
One for blower; one at each end of main rotor shaft.

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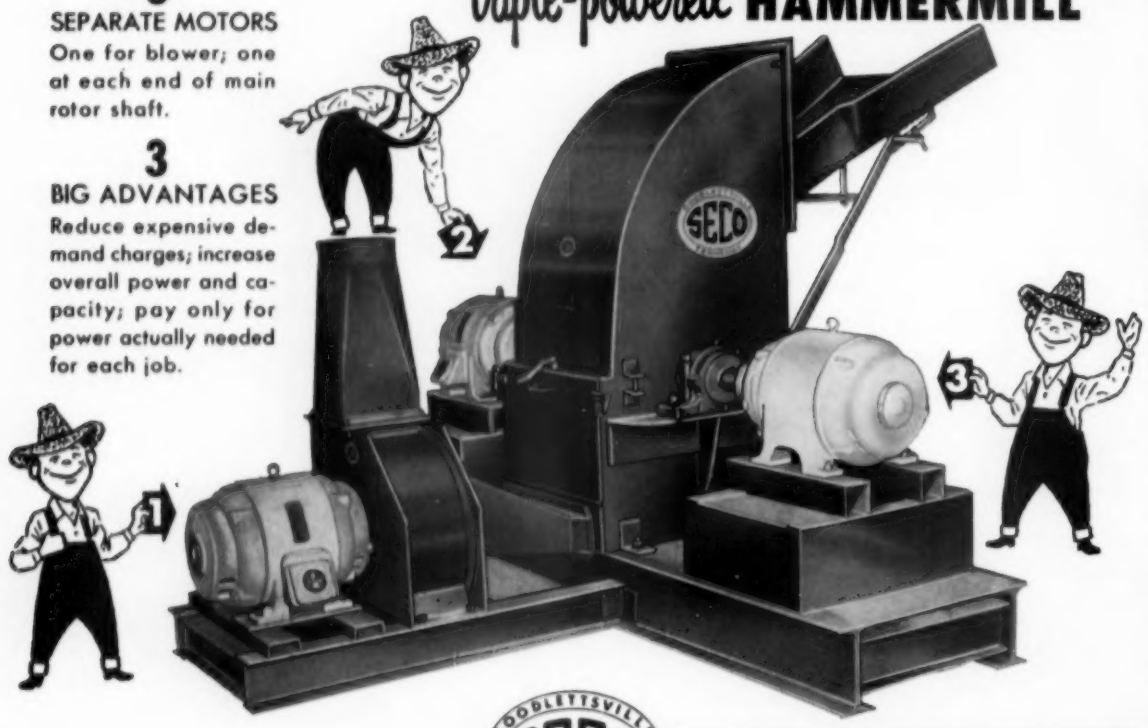
BIG ADVANTAGES
Reduce expensive demand charges; increase overall power and capacity; pay only for power actually needed for each job.



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Tests prove these highly-digestible soft roof shells turn into quality egg shells in as little as 6 hours after consumption. Wise dealers—like wise poultrymen—insist on them.

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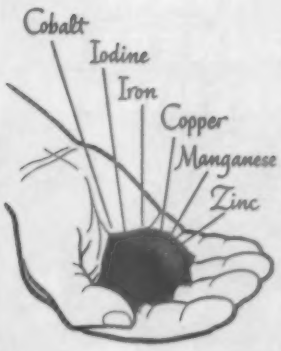

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Feeding Morton T-M Salt free choice is an easy, economical way for livestock men to assure their animals essential trace minerals. For Morton uses all the top quality compounds that research has shown to be the best nutritionally available sources of trace minerals:

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The source of the all important element—iodine—in Morton T-M blocks and bricks is from 3-5-diiodosalicylic acid—a mineral compound that is not soluble in brine or water. Therefore there is NO DANGER OF LOSING THE IODINE CONTENT in Morton blocks or bricks when exposed to the rain or animal saliva.

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The Morton name sells salt for you! Powerful advertising tells livestock men about Morton T-M Salt. They read Morton ads in their favorite farm publications . . . hear Morton sales messages every Saturday noontime on Alex Dreier's radio show, "Topic for Today." When you recommend Morton T-M Salt to any customer, he already knows it's the finest product of its kind.

MORTON SALT COMPANY
Chicago 3, Illinois

Boom in Population Predicted

A population boom that will increase the number of people in the U.S. by one-third in the next 20 years promises a bright future for the livestock industry and the feed industry which serves it.

Newly issued Census Bureau estimates on population growth indicate that within 10 years the U.S. will pass the 200 million mark and that by 1975 the population will be one third higher than in 1955.

This was pointed out by Martin Sorkin, office of the secretary, U.S. Department of Agriculture, in an address at recent soybean industry meetings. He said that if current fertility rates continue, the present high birth rates are expected to result in a very heavy period of new births in the 1965-75 decade. By 1975 the number of women in age groups 20 to 34 years may total 45% above 1955.

Pointing out expected population increases by states, he said that by 1970 all states but two are expected to have substantial increases, and that the losses in those two states will be only 3%. Table 1 shows the increases anticipated for the various states of the nation.

Most rapid growth is shown for the Pacific, mountain and southwestern states—basic shifts that will also affect the livestock and feed industries.

Mr. Sorkin also said that within 10 years it is believed that 50% of U.S. pork production will be from meat-type hogs.

State Population

State	1955 Census estimated	1970 High estimated	% Incr.
Maine	906,000	1,030,000	14
New Hampshire	533,000	652,000	22
Vermont	378,000	403,000	7
Massachusetts	4,773,000	5,514,000	16
Rhode Island	817,000	931,000	14
Connecticut	2,200,000	2,859,000	30
New York	16,021,000	20,023,000	25
New Jersey	5,324,000	6,942,000	30
Pennsylvania	10,898,000	12,508,000	15
Ohio	8,945,000	12,258,000	37
Indiana	4,329,000	5,715,000	32
Illinois	9,301,000	11,353,000	22
Michigan	7,326,000	10,483,000	43
Wisconsin	3,702,000	4,606,000	24
Minnesota	3,190,000	3,856,000	21
Iowa	2,671,000	2,959,000	11
Missouri	4,201,000	4,957,000	18
North Dakota	643,000	710,000	10
South Dakota	683,000	776,000	14
Nebraska	1,396,000	1,590,000	14
Kansas	2,060,000	2,498,000	21
Delaware	390,000	593,000	52
Maryland	2,744,000	3,970,000	45
Virginia	3,319,000	4,462,000	34
West Virginia	1,986,000	2,199,000	11
North Carolina	4,344,000	5,226,000	20
South Carolina	2,308,000	2,809,000	22
Georgia	3,662,000	4,301,000	17
Florida	3,580,000	5,912,000	65
Kentucky	3,011,000	3,322,000	10
Tennessee	3,414,000	4,036,000	18
Alabama	3,110,000	3,484,000	12
Mississippi	2,133,000	2,323,000	9
Arkansas	1,802,000	1,747,000	—3
Louisiana	2,934,000	3,695,000	26
Oklahoma	2,210,000	2,135,000	—3
Texas	8,748,000	11,752,000	34
Montana	629,000	755,000	20
Idaho	612,000	771,000	26
Wyoming	312,000	392,000	26
Colorado	1,547,000	2,197,000	42
New Mexico	793,000	1,126,000	42
Arizona	1,007,000	1,802,000	79
Utah	797,000	1,151,000	44
Nevada	235,000	453,000	93
Washington	2,607,000	3,954,000	52
Oregon	1,685,000	2,433,000	44
California	12,961,000	20,296,000	57
		208,000,000	

Dawe's Laboratories Diversifies Output

CHICAGO — Dawe's Laboratories, Inc., Chicago, has announced diversification of the company's production with entry into the field of chemicals for industries other than those presently served.

Vernon Dawe, vice president, stated that the company is in full scale production on sodium gluconate technical and gluconic acid technical 50%, which are sequestering agents. The producing unit is Dawe's Fermentation Products, Inc., Newaygo, Mich., a subsidiary company of Dawe's Laboratories. Dawe's has specialized for more than 30 years in feed and pharmaceutical vitamins.

BUYS PORTABLE MILL

SELBY, S.D. — Merton W. Cole, Selby, has purchased the portable feed mill formerly operated by Ervin Hettich, and will continue to do custom feed grinding in this area.

TRADE MARK REG.
VITA-GEE
A LIVE YEAST CULTURE — for 4-footed animals and poultry. Supplies all known B Complex Vitamins including B_{12} plus other nutritional factors. Easy to add to any formula.
Write or Wire for sample and prices.
ZELLERS' LABORATORIES READING, PA.

QUIZ
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"How Does Your Packaging Operation Rate?"

1 Is your bag correctly sized for your product?
2 Is your bag properly constructed for your product?
3 If loss of product is caused by deterioration, would special protective sheets help to reduce such loss?
4 Is the total cost of your bag out of proportion to the selling price of your product?
5 Does your product cost warrant redesigning your bag to merchandise your product more effectively?
6 Are you using the most economical filling machine available for packaging?
7 Are your current suppliers giving you the service you desire?
8 Are your suppliers integrated and capable of maintaining dependable service at all times, under all conditions?
9 Are your suppliers' representatives qualified to help you with your packaging, sales promotion and marketing?

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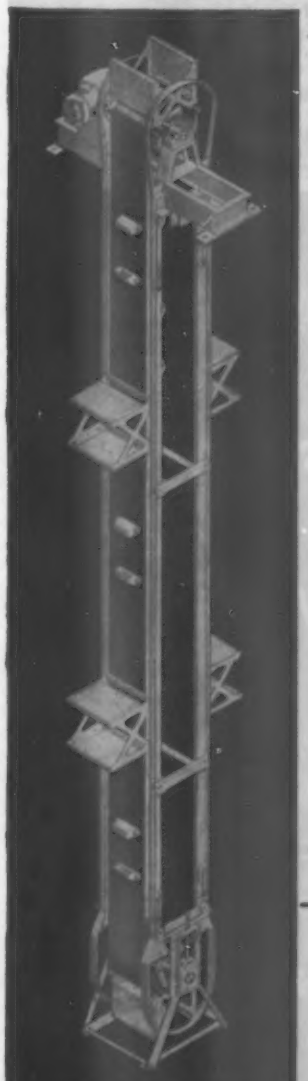
This typical country elevator at Navarre, Kansas, like the largest ones, relies on Ehrsam equipment.

A giant among grain storage terminals is this elevator at Enid, Oklahoma — with equipment by Ehrsam.

find economy and efficiency with EHRSAM ELECTRIC ELEVATORS and BELT MANLIFTS



This rapid, safe transportation between levels for employees pays off big for grain elevator operators—big dividends in increased efficiency of plant operations. The Ehrsam manlifts and elevators conserve man energy and keep working spirits high! Equipment and processes are often neglected when workers must climb a ladder or a flight of stairs. Both elevators and manlifts are available with explosion proof electrical equipment.

You save man-hours, eliminate fatigue, speed production, and increase safety with Ehrsam Elevators and Manlifts. They are factory assembled and pre-tested. With complete erection instructions and drawings installation is quick and easy for your own mechanics and electricians, or by local contractor. Ehrsam Electric Elevators and Belt Manlifts conform to the requirements of the American Standard Safety Code, and all local and state codes.

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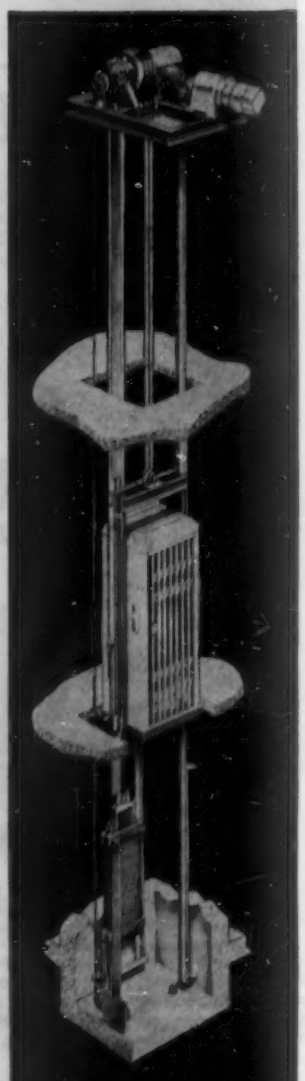
Ehrsam Belt Manlift for one or more passengers. Ideal for grain terminals or country elevators.



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Minnesota Scientists Report Swine Feeding Experiments

ST. PAUL—Minnesota swine feeding research suggests that alteration of the feeding program will in all probability be a much less efficient means of producing a hog carcass than will be a proper breeding program.

This was noted by University of Minnesota scientists in one of their research reports at the university's recent annual Swine Feeders Day. The report dealt with an experiment conducted to determine the influence of protein content of the ration on gain and carcass quality of pigs.

Other reports covered such things as the use of various additives and ingredients in formulas for pigs weaned at two and three weeks of age; influence of protein level in winter rations for bred gilts; influence of source of protein on performance of pigs fed in drylot; use of arsanilic acid in free-choice feeding of growing pigs; and zinc supplementation of swine rations to prevent parakeratosis.

Conducting the experiments were Dr. L. E. Hanson, head of the Minnesota animal husbandry department; Dr. R. J. Meade, swine nutritionist, and others.

In the experiment on the influence of protein content on gain and carcass quality, the workers fed pigs from nine weeks of age to market weight. Some of the pigs were fed 16 or 14% protein until they weighed 125 lb., and then were changed to 11% protein. Another group was fed 12% protein all the way.

Use of lower protein levels resulted in slightly lower gains and more days being required for the pigs to reach market weight. None of the treatments affected feed efficiency. The feeding of rations containing different amounts of protein also failed to cause any significant differences in carcass excellence.

"These results," said the researchers, "confirm those of earlier experiments in that the protein content of the diet did not influence carcass merit. There were small but insignificant differences in percentages of lean and fat tissue in the carcasses due to protein content of the diet. These results suggest that alteration of the feeding program will in all probability be a much less efficient means of producing a good carcass from the market hog than will be a proper breeding program."

Drs. Meade and Hanson also reported on a study of the influence of source of protein on performance of pigs fed in drylot. Six lots of 26 pigs each were fed rations in which linseed oil meal or tankage replaced a part of the soybean oil meal in a typical corn-soybean meal ration.

"Those pigs fed the corn-soybean meal or the corn-soybean meal-tankage rations gained more rapidly than did other lots of pigs," they said. "When linseed oil meal was used as a partial replacement for soybean meal, the pigs gained more slowly, probably because the use of linseed meal reduced the lysine content of the rations. The use of 8% of dehydrated alfalfa meal as a source of vitamins caused a reduction in rate of pig gain and adversely affected efficiency of feed utilization. These feed mixtures were higher in crude fiber."

Pig Starters

As in previous years at the Minnesota station, most of the pigs farrowed during the fall of 1956 and spring of 1957 were weaned at two or three weeks. Drs. Meade and Hanson and associates conducted further studies with these pigs to obtain more information on some feed additives and feed ingredients. The experiments, they said, were continued also in an attempt to formulate more efficient and economical pig starters.

One study was conducted using a whole dried sweet whey and a whey having 10.8% ash, an acidity value of 4.94% and a chlorides value of 4.04%. Each was fed at 3 and 10% of the mixtures. In this study, it was reported, feeding of 3 or 10% of either whey failed to cause a consistent increase in daily gain or final weight. It was felt that the lack of consistency of results was more likely due to differences between lots of pigs than to the amount of whey of either kind.

Another experiment was on the effect of certain antibacterials in pigs weaned at three weeks. A streptomy-

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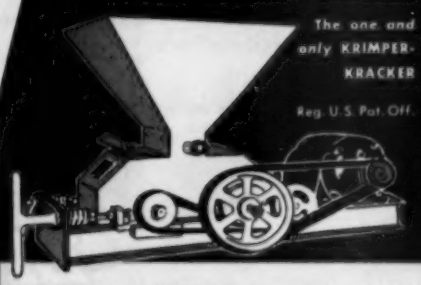

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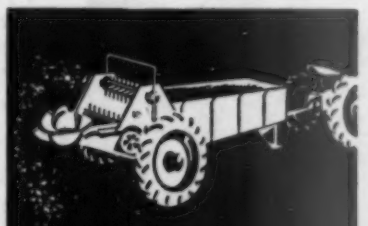

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cin and sulfaquinoxaline mixture at 50 and 100 grams per ton and furazolidone at 100 grams per ton were compared with chlortetracycline at 50 and 10 grams per ton.

"All of the antibacterial agents tested caused a marked improvement in rate of gain and in final weights," the researchers said. "Likewise, the use of these materials resulted in varying degrees of improvement in efficiency of feed utilization. The performance of pigs fed rations supplemented with either of the levels of streptomycin-sulfaquinoxaline preparation was at least equal or superior to that realized when pigs were fed a ration with 50 grams of chlortetracycline per ton. The addition of 100 grams of furazolidone per ton of starter caused a 43% increase in rate of pig gain but did not appear to be as effective as other additives."

The workers noted that in previous work, oxytetracycline, chlortetracycline, procaine penicillin and a procaine penicillin-streptomycin mixture have been effective in improving gains of early weaned pigs at Minnesota and other states. They said the recent test was conducted to study two of the new agents.

The Minnesota researchers also reported on a study of high levels of whey from two sources, using a dried whole sweet whey and a whey having 11.04% ash, an acidity value of 3.9% and a chlorides value of 3.60%. Ten per cent of the whole sweet whey replaced 3% of dried skim milk and 7% of corn in one diet, while two diets were used where the dried skim milk was eliminated and 30% of each of the test wheys was used to replace the dried skim milk and part of the corn.

The use of 10% of whey did not improve performance of the pigs in this test, Drs. Meade, Hanson and associates reported. Daily gains and final weights of pigs as well as feed efficiency were reduced when 30% of either whey was included in the mixtures and all of the dried skim milk was omitted. There was no real difference in pig performance due to source of whey when it was fed at the 30% level, the researchers said. All of the pigs used in this experiment, they added, tended to scour at the start of the test and scouring persisted throughout the test in lots fed 30% of dried whey.

Whey and Pepsin Study

A fourth experiment with baby pigs involved a study of the influence of different levels of dried whole sweet whey and pepsin upon performance of pigs weaned at two weeks. Previous tests with dried whey, it was noted, were conducted with relatively small number of pigs and usually with widely spread levels of whey. It was considered desirable to test several levels of whey where additions were made to a relatively simple pig starter. Whey additions were made at the expense of soybean meal and corn. Since previous Minnesota tests have not indicated that pepsin improved rate of gain or feed efficiency of pigs weaned at three weeks, it was decided to place half of the pigs in this test on rations containing pepsin. Pepsin was added at the rate of 3 lb. (Pep-Swin, 1:3000) per ton. The experiment used a total of 192 pigs. One starter containing 10% of milk products other than whey was used. Whey levels tested with 5, 10, 15, 20, 25, and 30%. Other principal ingredients were corn, sugar, soybean meal, fish meal and tankage, plus steamed bone meal, trace elements and vitamin premix.

Results were summarized as follows:

"The addition of all test levels of dried whole sweet whey caused increases of from 3 to 11% in the final weights of the pigs. Use of 5% each of dried skim milk and dried buttermilk resulted in a 7% increase in final weights. All final weights and average daily gain were considered quite satisfactory for pigs weaned at 14 days and weighed off test at 54 days. Whey additions failed to improve feed efficiency. None of the amounts of feed required per unit of gain was considered satisfactory for pigs of this weight and age. (Feed efficiencies ranged from 2.12 to 2.44.)

"Because of the necessity of starting pigs as they became available over a period of 12 days, it happened that the two units of 48 pigs placed

(Turn to SWINE FEEDING, page 46)

LOUISVILLE OPENING—Part of the throng of 9,300 persons who attended the celebration opening the new Ralston Purina Co. mill at Louisville is shown in this picture. The mill is in the background. George W. Hubley, Jr., Kentucky commissioner of economic development, was the main speaker. A free barbecue chicken lunch and entertainment were other features.

Lilly

REPORT TO THE FEED INDUSTRY

'Stilbosol'-fed heifers average 2½ lbs. a day...feed cost held to 17 cents per pound

Daily gain is up . . . feed costs are down. "I'm going to keep on feeding 'Stilbosol' to all my market heifers," Lone Tree, Iowa, cattle feeder states.

by Eugene S. Hahnel

"I'll keep on feeding 'Stilbosol' through my cattle supplements. I feed all heifers. Their daily gain is up at least one-quarter pound, compared to the days before 'Stilbosol.' But, the big thing is . . . my feed costs are lower. This means my feed goes further and I save on cost of production."

These simple, direct statements sum up the 'Stilbosol' feeding experience of Alten Wolford of Lone Tree, Iowa. Mr. Wolford finishes about 50 head of heifers on his 160-acre farm yearly. Last year, he figured they averaged 2½ pounds a day over a medium-length feed. And, he estimated his cost per pound of gain right at 17 cents.

Wolford full-feeds his heifers in groups of about 20 head. Their basic daily ration is 16 lbs. of corn and cob meal along with a commercial supplement containing 'Stilbosol.'

Gets Good Service—"The quality of the feed I buy is something I can trust," Mr. Wolford said. "I know my feed manufacturer will have the latest ingredients in his feed that will help me cut feeding costs. The service I get from my feed manufacturer and his dealer is just what I like. Both are likeable and willing to help."

Cost of gain is the important thing to Alten Wolford. Last year, his 'Stilbosol'-fed heifers averaged 2½ lbs. daily gain at a feed cost of 17 cents per lb.

Alten Wolford (left) takes feed manufacturer's representative, Don Dickel, to the feedlot to see his heifers that are thriving on supplements with 'Stilbosol.' Wolford's story will be read by cattle feeders in 20 national and regional farm magazines.

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MERCHANDISING HINTS FOR THE FEED RETAILER

No-Cost Publicity

Feed men get so accustomed to paying for local advertising that many forget about the free opportunities for publicity that the community offers. Yet there are always a few businessmen here and there who are ready for the no-cost opportunities when they come along. Good examples of this were noticed at the New Mexico State Fair in Albuquerque where alert feed manufacturers donated some sample bags to displays that showed the diversified industries of various New Mexico counties. The ever-busy county agents who have to prepare these displays appreciated such posters and samples. The Colfax County booth showed products of the Lacy Feed Co. of Maxwell and the Raton Flour Mills, and the Roosevelt County display included feed sacks of Worley Mills, Inc., of Portales and Clovis. Also, the Worley company kept a supply of descriptive brochures next to the booth for distribution to the public. In addition to fairs, feed men are finding free display opportunities in the downtown show windows of banks, utilities, and retail stores. The emphasis in many communities is on the promotion of local industry, and the feed man who has a display ready—showing his products, pictures of equipment and services, posters on payrolls and taxes paid—gets the invitations. Some flexibility is required to adapt a display to the four seasons, to a safety campaign, to a "buy locally" drive, or to a community anniversary. But one thing is constant: You reach your public in a receptive mood.

Premium Ups Sales

A farm supplier test marketed one of its products last fall by giving free with each package one pair of work gloves. It was found that sales increased 241% in widely separated areas where the glove premium was used. The work glove was a leather-palm style ideal for farm and garden work. One glove was displayed on the outside of the package and one was inside. A special label and store banners helped promote the free glove offer. The promotion was so successful that the company is using an expanded promotion this fall.

$1.25 Per Letter

It costs about $1.25 to write a business letter. That's what a recent survey of 200 business firms showed. The study included such letter writing costs as dictation, stenographic time, overhead, mailing, stationery and filing. This is a surprising figure for one would not expect a letter to cost so much. It behooves operators to give some thought to making more use of form letters, especially for acknowledgement purposes, and to the telephone if the communication is of a nature which does not require a record.

Let Others Know

"Doing business without advertising is like kissing a girl in the dark. You know what you are doing—but no one else does." From the American Dehydrators Assn. Bulletin.

Double Duty

The back of envelopes can do double duty for feed store owners. Some dealers print on the backs of their envelopes the pictures of their store fronts, with the names prominently shown. One dealer has one of his billboards reproduced in full color on the back of his envelopes. Others use slogans, signs and brand names. Such pictures and printing can serve to give the store added publicity at little extra cost.

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Now at a reduced cost you can get the same Training Course that hundreds of leading Feed Executives have purchased. You get 15 Books on "How to Sell Feed today"...12 Books on "Animal Health Problems and 25 Books on "Know the Answers Quiz"...at 37¢ per book for these 52 lessons, while the supply lasts.

Buy them for your Salesmen and Dealers. 5...sets at $15.00 each...10 sets at $13.00 each...25 sets at $12.00 each.

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Please send on 10 DAYS FREE EXAMINATION one complete set of your 52-lesson Sales Training Course plus the 15 Quiz Questionnaires on "HOW TO SELL FEED TODAY". Within 10 days I may return it without obligation...or you may bill me $19.24 for the complete set which you sent.
It is agreed that if we order more sets for our Salesmen and Dealers we are to only pay the quantity rate for the first set.

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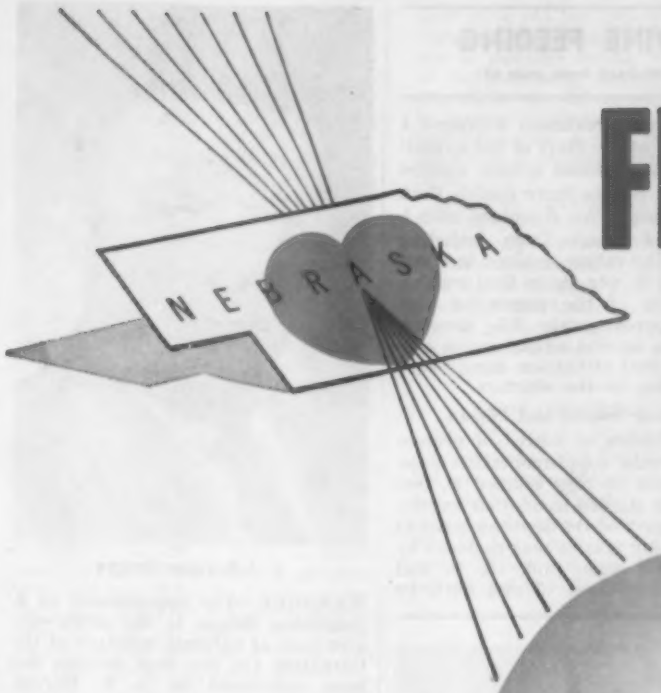

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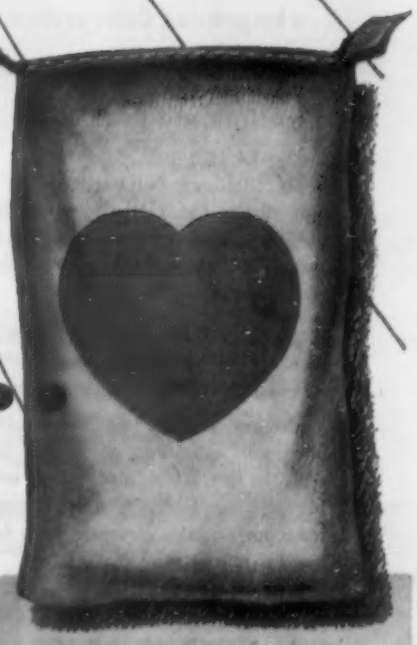

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SWINE FEEDING

(Continued from page 43)

on the pepsin treatment averaged 1 lb. heavier at the start of the experiment. Both of these groups started eating test rations more readily than did other pigs. This combined with a possible advantage from including pepsin in the ration resulted in a net gain of 2.5 lb. per pig in final weight. Daily gains of the pepsin-fed pigs were approximately 8% greater. There was no real advantage in efficiency of feed utilization due to pepsin addition to the starters."

Protein Source and Pepsin

The influence of source of protein and of pepsin supplementation upon performance of pigs weaned at two weeks was studied in another experiment. A part of the soybean meal in the basal pig starter was replaced by either dried skim milk (5, 10 and 15%) or fish meal (3 and 6%), or combinations of the two. Other principal ingredients were corn, rolled oats and sugar, plus minerals and vitamins. The mixtures were fed with and without supplemental pepsin at the rate of 5 lb. per ton.

Replacement of part of the soybean meal with dried skim milk resulted in greater gains. As the amount was increased, the greater became the daily gains. This, said the researchers, may have been due to improved palatability along with a possible improved nutrient value. Likewise, both levels of fish meal caused an improvement of 5 to 10% in daily gains and final weights. Protein quality may have been affected, but it appears more likely that the improvement resulted from some factor in the fish meal.

The combinations of fish meal and dried skim milk were equally effective in promoting more rapid gains. It would appear that improved palatability and nutrient value caused these results.

Feed efficiency was improved 6%

J. Ackerman Briggs

MANAGER—The appointment of J. Ackerman Briggs to the newly-created post of national manager of the Carnation Co. pet food division has been announced by A. P. Herold, chairman of the board of the Albers Milling Co., a subsidiary of the Carnation Co. Mr. Briggs, a graduate of Stanford University, was most recently advertising and promotion manager of a California retail food chain. He formerly was advertising manager of the W. L. Kellogg Co., Battle Creek, Mich., and served in executive positions with two Los Angeles newspapers.

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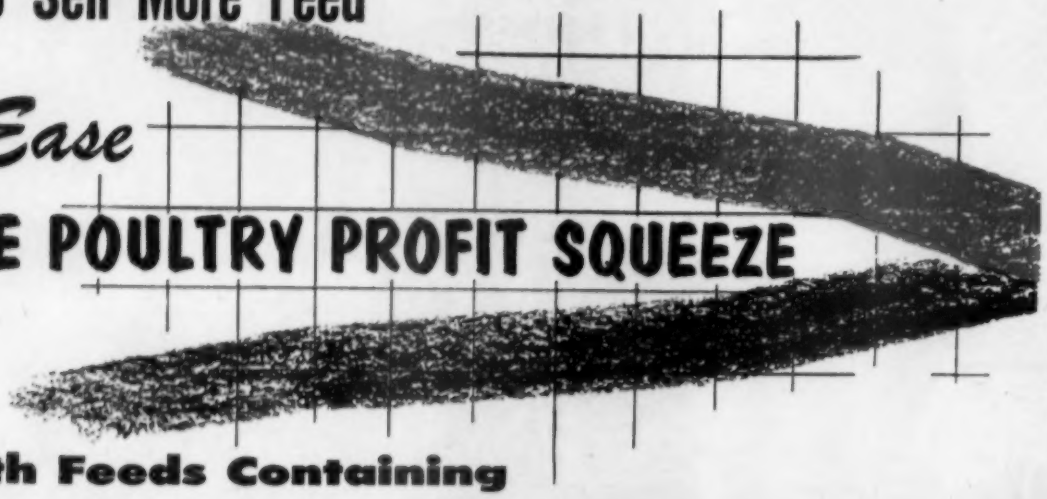

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- Improves Conversion
- Helps Prevent Many Diseases
- Stimulates Growth

Feeds containing Polystat ease the profit squeeze from start to finish. Birds grow 9.6% faster on ¼ pound less feed per pound of live weight, on the average. Polystat also reduces death, feed and growth losses due to:

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In addition, Polystat improves coloring, feathering, and general appearance of birds . . . *increases market values*. In fact, it's been proven on millions of birds, only feeds containing Polystat do so much to increase profits for raisers . . . create more favorable conditions for selling feed.

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- Stimulates Growth
- Improves Conversion
- Increases Egg Production

Dr. Salsbury's 3-Nitro in broiler and layer feeds eases the squeeze between costs and market prices, too. Broiler chicks gain weight faster, require less feed, finish out better for top market prices.

Layers develop fully, quicker, go into production sooner, lay up to 12 extra eggs per hen the first year. *No single feed ingredient costs so little and does so much as 3-Nitro.*

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Are tested and proved at Honeggers' 600 Acre Practical Test Farm. The superior results of Big "H" Feeds mean repeat orders and repeat profits.

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by use of 15% dried skim milk, 4% by use of 6% of fish meal and 11% by use of a combination of 6% fish meal and 15% dried skim milk. The values for feed efficiency were somewhat high for pigs of the weight and age studied.

When the response to pepsin was considered, other treatments being ignored, it was apparent that pepsin supplementation of the starters used in this study was without effect.

Zinc Supplementation

Drs. Hanson and Meade reported on a study to determine whether zinc oxide and a high-zinc trace element salt would be as effective in preventing or curing parakeratosis in swine as was the zinc from zinc sulfate in previous studies.

In this study, parakeratosis was again produced by feeding growing pigs a ration containing excessive calcium. This was prevented or alleviated when the pigs were fed rations containing 22 or 25 ppm of added zinc. The pigs fed a ration containing .6% calcium did not develop parakeratosis. However, said the researchers, this does not permit the conclusion that pigs fed such a ration will not on occasion develop parakeratosis. Hence, they said, it is recommended that rations for growing pigs include at least 22 or 25 ppm of supplemental zinc in the complete rations. Based on the research, they said, this may be supplied by using proper levels of a high-zinc trace element salt, a trace mineral mixture containing the proper amount of zinc or by using zinc sulfate or zinc oxide. Zinc carbonate, they added, has also been shown to be effective in studies at other stations.

Arsanilic acid, the Minnesota researchers said in a report on one of their studies, has been shown to be a useful antibacterial agent and growth promotant in swine rations. They conducted further studies on its use in free-choice feeding of growing pigs.

Eight lots of six pigs each were fed corn or oats and a mixed supplement or a soybean meal supplement from nine weeks to slaughter weight. The supplements contained either 450 (.05%) or 900 (.10%) grams of arsanilic acid per ton. There was no difference in average daily gains of pigs due to arsanilic acid content of the separate supplements, the scientists said, although the soybean supplement appeared to be superior to the supplement with mixed protein sources in promoting gains. Pigs fed oats and supplement free-choice consumed excessive amounts of supplement. They also consumed very high levels of arsanilic acid without evidence of arsenic toxicity. Results of this test, said the researchers, further support the suggestion that the presently recommended level of .05% arsanilic acid in the supplement constitutes no hazard to the pig.

Rations for Bred Gilts

A study of protein level in winter rations for bred gilts was reported by the Minnesota workers. Sixty-two gilts were self-fed rations containing 10.7 or 14.3% of protein to obtain further information on the influence of protein content of the gestation ration on sow reproductive performance. There was essentially no difference in number of live pigs born or number of pigs weaned due to percentage of protein in the gestation ration. Although fewer of the litters from gilts fed the higher protein ration became sick and fewer pigs died due to sickness during the last part of the farrowing season, there was essentially no difference in sow reproductive performance for the entire farrowing period, said the researchers in summarizing the experiment.

However, reproductive performance of sows during the latter part of the farrowing period supports a previous Minnesota research report in which it was suggested that pigs produced by sows fed the lower level of protein during gestation appeared to be less resistant to disease. The study will be continued.

ADDS CONCRETE BINS

BELLEVILLE, KANSAS—Twenty concrete bins, with 310,000 bu. capacity, are being added to the Hall Mill & Elevator Co. The bins will be identical to 20 bins added to the east side of the headhouse in 1954. The new addition will give the firm total capacity of 820,000 bu.

Worms Bring Enteritis, Wisconsin Report Says

MADISON, WIS. — University of Wisconsin veterinary scientists report that swine enteritis can follow a whipworm infection with a severe death rate in young pigs.

A. C. Todd, S. H. McNutt, Alice Goldsby and K. G. Powers infected four 35-40-lb. pigs with whipworm eggs last year, and three of the pigs died of enteritis during the next three months. Pigs kept under the same conditions but not given whipworm infections showed no evidence of enteritis during the tests.

The pigs were protected from other parasites and diseases after they were given the whipworm infections. The whipworms were cultured in antibiotic solutions to kill any bacteria they might have been carrying.

The U.S. Department of Agriculture estimates production losses due to whipworms at around $13 million for the nation; but losses due to baby pig diseases are estimated at more than $400 million. Much of this is due to enteritis.

Dr. Todd's group is now preparing pure infections of ascarid, stomach worms and nodular worms to study these parasitic infections as related to the development of enteritis.

Merchen Feeder Sales Manager Named

BELLEVILLE, N.J. — Charles A. Rowe has been appointed sales manager of the Merchen feeder department of Wallace & Tiernan, Inc., Belleville. He will supervise sales and service of Merchen weigh-belt type feeders and meters used for automatic batching and continuous blending of dry materials in the chemical, food and animal feed fields.

Mr. Rowe has been associated with the Belleville firm for 18 years. He will have his headquarters at the Belleville plant.

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Now Test from a larger, more representative 250 gram sample for:

Corn Soybeans
Wheat Flax
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NOTE: Tests are equivalent to the basic standards of the U.S.D.A.

You'll have to put the New Seedburo Steinlite Model 500 RC through its paces to find how easy and conveniently this improved model makes moisture tests. You simply drop the larger, more practical 250 gram sample into the test cell and read the meter...simple as that.

As added safety features the funnel resets itself automatically to hold next sample. Test cell slide snaps back automatically after tested sample is dropped into grain drawer...no danger of spilling new sample through open test cell.

Remember, for the fastest, most accurate moisture testing operation depend on the Seedburo full line of moisture testers—and for the improved and more convenient way to run grain moistures—ask about the New Steinlite Model 500 RC. Full information and the famous Seedburo service is as near as your phone.

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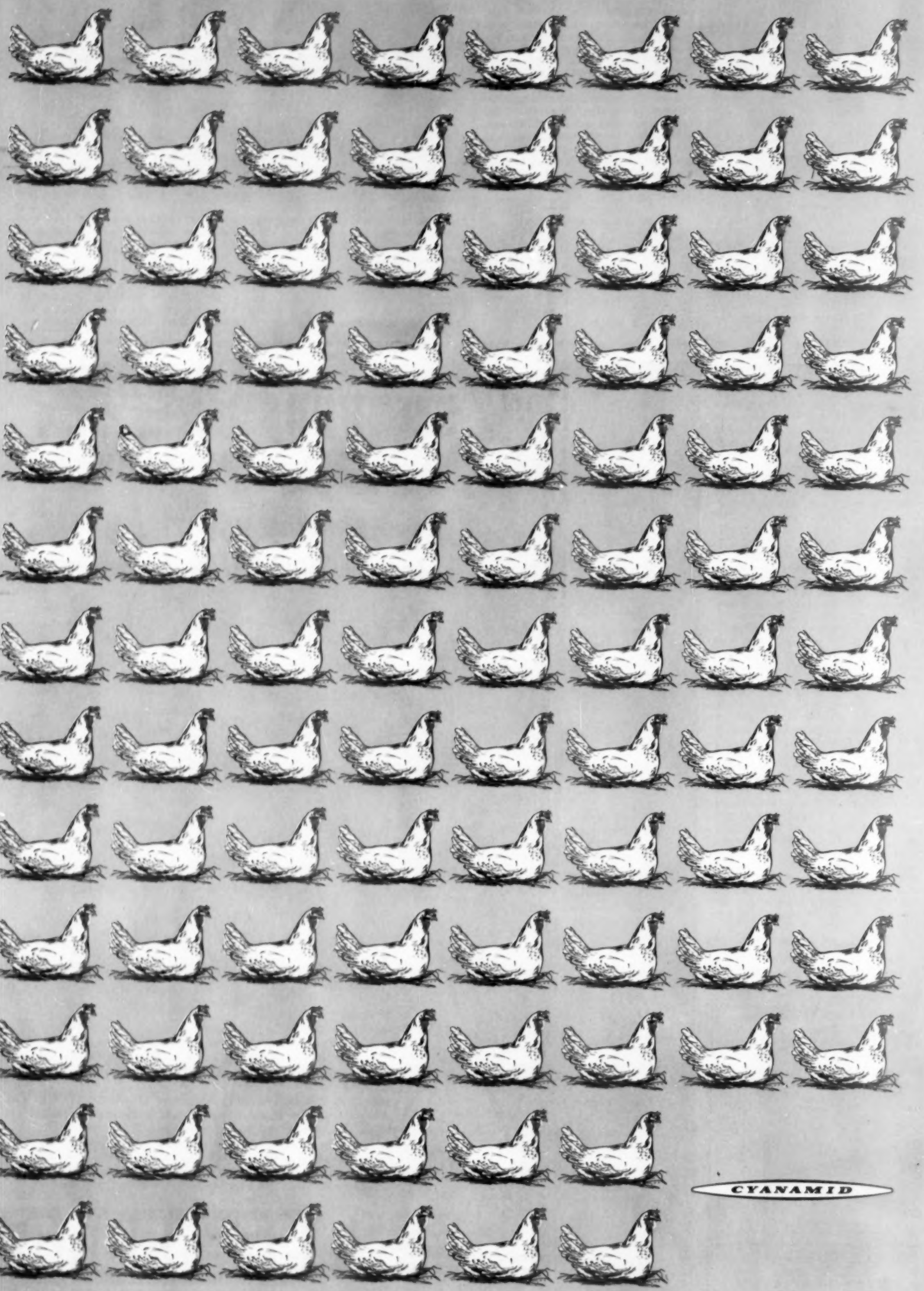
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"Get $80 or more extra return per hundred hens"

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When AUREOMYCIN is in a good layer feed in the *right* amount, hens are healthier. They have more vigor. They don't have those costly slumps caused by CRD and blue comb – by extreme cold or hot weather. They lay more eggs and keep on laying them over a longer time. Every week is a profit week for your customers.

In a trial on a poultry farm, 1,000 White Leghorn hens were divided into two groups of 500 each. One group got AUREOMYCIN in their feed, the other didn't. Over a year's period, the group fed AUREOMYCIN produced 1,800 *more* dozens of eggs. At 35¢ per dozen eggs, that meant an EXTRA RETURN – including the cost of AUREOMYCIN – of $400, or $80 per hundred hens.

Write for your free supply of a new leaflet called: "More Eggs to Sell." It tells all the advantages of AUREOMYCIN in layer and breeder feeds and includes trials proving these advantages which were made at Experiment Stations and on poultry farms. ANIMAL FEED DEPARTMENT, FARM AND HOME DIVISION, AMERICAN CYANAMID COMPANY, NEW YORK 20, NEW YORK.

Good layer and breeder feeds, with the right amount of Aureomycin, provide your customers with:

More eggs over a longer period.
More early and late season eggs.
More eggs per 100 lbs. of feed.
More eggs in the presence of disease.
More eggs in times of stress.
More chicks from increased hatchability.

Recommended levels for use of Aureomycin in layer and breeder feeds

1. In areas of average disease exposure, the continuous feeding of 50 grams of AUREOMYCIN Chlortetracycline per ton of complete feed is recommended.
2. In areas of severe disease exposure, the continuous feeding of 100 grams of AUREOMYCIN Chlortetracycline per ton of complete feed is recommended.
3. If there is a quick drop in feed consumption, hens should be fed 200 grams of AUREOMYCIN Chlortetracycline per ton of complete feed until feed consumption returns to normal. After that, the levels recommended above should be continued.

AUREOMYCIN® CHLORTETRACYCLINE ...for more dollars from more eggs!

like today's farmer's daughter BE MODERN enrich your feeds with PAPROCO

WEST COAST CONDENSED FISH SOLUBLES

with fish glandular and liver hydrolysate added

Today's modern farmer is a typical consumer of his own raw materials. His dairy products return to his doorstep from modern dairy processors. This modernization "revolution" also returns his grains and feed ingredients in modern feeds—properly formulated for maximum nutritional benefits.

Feed formulation has advanced as the nutritional requirements of livestock and poultry have been determined. Feeds fortified with the "plus" factors of PAPROCO West Coast Condensed Fish Solubles are as *modern* as today's farmer's daughter. Proved weight and growth gains obtained from feeds containing PAPROCO will result in increased sales and profits for you. So be a *modern* feed manufacturer. For results and profit incorporate PAPROCO West Coast Condensed Fish Solubles in all your feeds.

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Contains PAPROCO Condensed Fish Solubles, fish glandular and liver hydrolysate, solvent extracted soybean oil meal and phosphate mineral, manufactured by a patented process which requires no heat and preserves all the nutritive qualities of these ingredients. Sea Maid "40" is convenient and easy to use, requiring no special mixing equipment. Packed in 100 lb. multiwall paper bags, Sea Maid "40" is easily added to any formula.

YOU FIND THESE PLUS FACTORS ONLY IN PAPROCO

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Richard G. Sanders Takes Borden Position

NEW YORK—Richard G. Sanders has been appointed director of sales and marketing for the feed supplements division of the Borden Co., according to Earl J. Brubaker, general manager of the department.

The appointment, made as Walter H. Kenlan resigned the sales post, was announced as the feed supplements department completed its planning for a more aggressive product development and marketing program for the forthcoming year.

Mr. Sanders said that plans for next year include increased research into new and improved feed supplements. He also said that an expansion of the department's nutrition research laboratory at Elgin, Ill., would be completed later this year.

Mr. Sanders joined the Borden Co. earlier this year as director of marketing and planning for the special products division. He had previously been associated with the marketing consultant firm of Stewart Dougall & Associates.

400 FFA Members at Wirthmore Dinner

BOSTON — Four hundred FFA members and their instructors from 12 northeastern states who took part in the contests at the Eastern States Exposition were guests of Wirthmore Feeds at an awards dinner held annually to honor the achievements of the group.

Taking place in the break between the contests and the parade before the six New England governors, the awards dinner served to honor state Star Farmers and set the stage for presentation of prizes to contest winners. Present were FFA national vice presidents James Quincey of Trenton, Fla., and Victor Cappucci of Mehoopany, Pa.

Joins Nebraska Staff

LINCOLN, NEB.—A new member of the University of Nebraska College of Agriculture staff is John L. Skinner, extension poultry husbandman. He replaced Elvin Schultz, assistant extension poultry husbandman, who resigned to become the animal and poultry specialist at Crete Mills.

Mr. Skinner received his bachelor of science degree from the University of Nebraska. He obtained his master's degree from Texas A&M College and was employed by the Poultry Research Center at College Station, Texas, from 1954 to the present.

J. H. LEFTWICH & CO., Inc.

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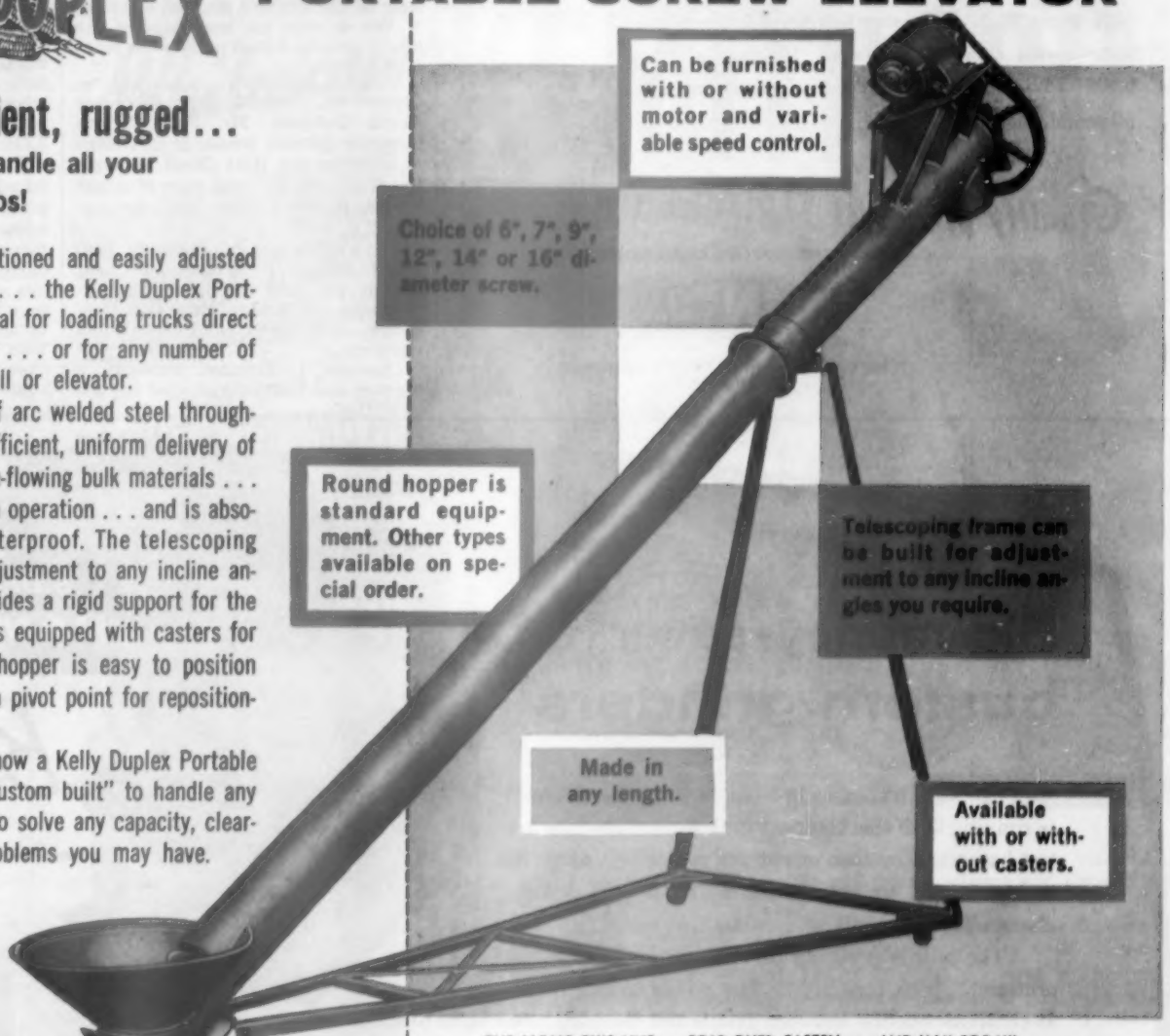
Ruggedly constructed of arc welded steel throughout . . . it assures you efficient, uniform delivery of grain and all types of free-flowing bulk materials . . . is smooth and noiseless in operation . . . and is absolutely dustproof and waterproof. The telescoping frame can be built for adjustment to any incline angles you require . . . provides a rigid support for the conveying tube . . . and is equipped with casters for easy moving. The round hopper is easy to position . . . even when used as a pivot point for repositioning the discharge.

We'd like to show you how a Kelly Duplex Portable Screw Elevator can be "custom built" to handle any number of jobs . . . and to solve any capacity, clearance or incline angle problems you may have.

Check and mail card today for literature and full details.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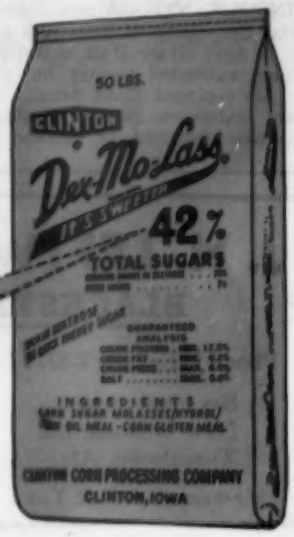

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Dex-Mo-Lass gives your customers' livestock more of the quick energy sugar they need . . . because Dex-Mo-Lass has 42% sugar *in* it. This extra feedpower in feeds and silage makes animals gain faster. Besides, animals eat more feed because they like Dex-Mo-Lass. In convenient 50-pound bags.

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R. W. Coho, Jr. | C. W. Holland | A. L. Kaschub | C. I. Summy

Daffin Establishes Eastern Division

LANCASTER, PA. — The Daffin Manufacturing Co., Lancaster, has established an eastern division for its new line of packaged stationary feed plants.

Sales manager for the division is Ralph W. Coho, Jr., who has been with the company since 1956 and who has had varied experience in sales and sales management. Manager of the western division is James N. Woods, who has been head of the firm's packaged feed plant sales since 1955.

Working with Mr. Coho will be Charles W. Holland, who will cover North Carolina. Mr. Holland was formerly general manager in charge of sales for the Blue Grass Minerals Co., Stanford, Ky., and sales manager for the Burley Burner Corp., Lexington, Ky.

Alden L. Kaschub, formerly general manager of the Lenover Corp., Atglen, Pa., and manager of manufacturing at Hubley Mfg. Co., Lancaster, will cover a Pennsylvania territory.

Clarence I. Summy, formerly a teacher and district manager for the Hamilton Equipment Co., Ephrata, Pa., has been assigned to a Virginia territory.

Hog Numbers Up On Canada's Farms

WINNIPEG — A 10% increase in the number of hogs on Canada's farms was reported by the Dominion Bureau of Statistics as of Sept. 1. The 1957 estimate of 5,293,000 hogs compares with last year's corresponding total of 4,800,000.

Reports from farmers in eastern Canada point to a 5% increase to 2,729,000 head from 2,590,000, and a 16% increase is evident in the West, where hogs on farms are estimated to number 2,564,000, compared with 2,210,000.

The summer pig crop (litters born June to August) appears to be approximately 16% larger than in 1956 with 255,500 sows estimated to have farrowed during the 1957 period compared to last year's comparable figure of 220,200. Increases are general in all provinces amounting to 10% in the East and 24% in the West. This increase in farrowing activity over last year is expected to continue and even accelerate.

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HAMMER MILL
with the Big Plus

You can switch screens in seconds while the machine is running with this compact unit. Screen changes are not hampered by torn or clogged screens. Capacity is not sacrificed to accommodate the unique screen-change arrangement.

The mill is designed throughout for flexible operation . . . high capacity . . . low power consumption. It eliminates delays between grinds and the high power costs of starting and stopping a mill to change screens. You'll speed up service, increase volume, and attract new customers with the Sprout-Waldron Side-Screen-Change Hammer Mill. For details, write for Bulletin 114.

Also available, a quick-screen-change hammer mill equipped with a positive remote control arrangement for screen changes. In addition to these quick-screen-change units, Sprout-Waldron offers a complete line of conventional mills. Details on request.

Sprout-Waldron's **BIG PLUS** assures you of expert engineering guidance on installations and applications . . . plus finest workmanship and service . . . plus a reliability based on 90 years of dependable service to the feed industry and a desire to continue for another century.

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FE/441

Wallace W. Hyde

CARGILL OFFICER—The appointment of Wallace W. Hyde as assistant vice president, grain division, was announced Oct. 1 by Cargill MacMillan, president of Cargill, Incorporated, Minneapolis. Mr. Hyde is manager of Cargill's New York office, which is concerned primarily with the export of agricultural commodities. Until recently, he was president of Tradax, Inc., New York firm which had acted as broker for Cargill until it was dissolved last month. Mr. Hyde, who now resides in New Jersey, is a native of South Dakota. He was graduated from the University of Minnesota in 1930 and has been active in the grain business since that time.

Mississippi Poultry Meeting Date Set

BILOXI, MISS.—A panel on trends in feeding and a discussion on feeding additives and growth stimulants will highlight the annual meeting of the Mississippi Poultry Improvement Assn. to be held here at the Buena Vista Hotel, Oct. 28-30, P. H. McDonald, president, announces.

Members of the panel will include W. L. Lavery, William Davis Co., Inc., Danville, Ill.; E. O. Creel, Alabama Flour Mills, Decatur, Ala.; Dr. J. L. Milligan, Ralston Purina Co., St. Louis, and Bill Garth, Garth Milling Co., Pelahatchie, Miss.

Dr. Elbert J. Day, nutritionist with the Mississippi State College poultry department, will discuss the stimulants.

Other feedmen on the program include Mays Montgomery, Dixie Home Feeds, Athens, Ala., and C. T. Ramzy, R&R Milling Co., Carthage, Miss.

The annual business meeting, with election of officers, will conclude the meeting Oct. 30.

Boston Poultry Show Theme Announced

BOSTON — "High Wheeling to Greater Poultry Profits" has been designated as the theme for the 110th Boston Poultry Show and New England Poultrymen's Conference to be held in Boston's Mechanics Bldg., Jan. 22-25.

The show to be sponsored by the Northeastern Poultry Producers Council has been extended to four days this year, instead of three. A new folder, describing the event, has been released to members of the allied industries.

Among the new features to be added this year is a "Poultry Pageant," an exhibit that provides a panoramic picture of the poultry industry from hatching eggs through to the poultry meat and eggs purchased by housewives.

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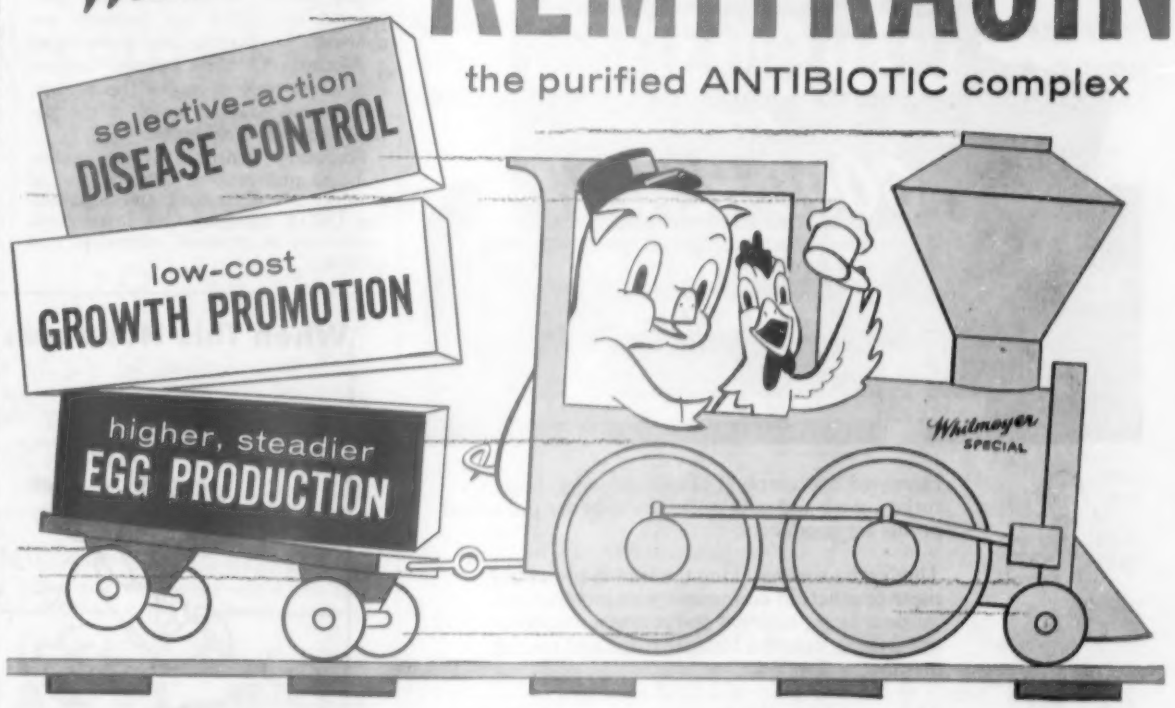

THE BIG QUESTION is not whether to use antibiotics in feed, but which one to use. You've read all the claims and counter-claims and the ads get bigger all the time.

Before you make your final selection be sure you try Kemitracin. Tests will prove that there is *no finer antibiotic for feed supplementation available today.*

KEMITRACIN STAYS IN INTESTINAL TRACT LONGER... GIVES SELECTIVE ACTION. Unlike many commonly employed antibiotics which are rapidly absorbed, Kemitracin is *not* absorbed from the intestinal tract, but is retained where its antibiotic activity can do the most good.

Kemitracin fights disease with *selective action.* By concentrating on the dangerous disease-producing bacteria, the beneficial types responsible for the synthesis of vitamins and other unidentified growth factors are left unharmed.

ECONOMICAL KEMITRACIN IDEAL FOR HIGH LEVEL OR LOW LEVEL FEEDING. Use a high level for disease control (blue comb, air sac, stress conditions, swine enteritis)... or for boosting egg production. Use a low level for growth promotion. Kemitracin mixes thoroughly with feed and is used at the same gram level as any other quality antibiotic.

COMPLETE SCIENTIFIC DATA AVAILABLE. Get the proof that Kemitracin is your best antibiotic buy! Write today! Another suggestion—stock and recommend AQUATRACIN for use where an antibiotic in the drinking water is indicated. It's the same purified antibiotic complex in completely soluble form.

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USDA Reviews Service To Farm Cooperatives

WASHINGTON — Ezra Taft Benson, Secretary of Agriculture, has announced that Paul S. Armstrong, former general manager of Sunkist Growers, Inc., has been named special consultant to review U.S. Department of Agriculture services to farmer cooperatives.

Mr. Armstrong retired last January after 25 years as general manager of Sunkist, cooperative marketing organization that serves citrus fruit growers of California and Arizona.

The National Agricultural Advisory Commission has requested a detailed review of services now performed by USDA for farmers' cooperative marketing and purchasing organizations. Mr. Benson invited Mr. Armstrong to make the review, and he has started work at the department in Washington.

Secretary Benson said the review is being undertaken with the aim of possibly strengthening and broadening USDA assistance to farmer cooperatives in research, education and service.

WINS NATIONAL AWARD — The Minneapolis Grain Exchange was the recipient of a national and regional award of merit from the American Society of Association Executives at its recent convention in St. Louis. It was the second time the exchange has won the award for outstanding service to the industry it represents, as well as the American public. On hand to receive the award, presented by the Very Rev. Paul C. Reinert, president of St. Louis University, center, were Tom Moe, International Milling Co., chairman of the public relations committee of the grain exchange, right, and George Wilkens, secretary of the grain exchange, left.

State Gets Incubator

ALBUQUERQUE, N. M.—The New Mexico department of game and fish has issued a public statement of thanks to J. R. Clark & Co., Albuquerque feed manufacturer, for the gift of a large-size automatic incubator, reportedly worth some $2,000.

The Clark firm, which is in the process of moving to Salt Lake City, manufactures poultry feeds and a special fish food that is sold to state and private fish hatcheries.

P/S This Sign of PROMPT SERVICE

Means more than just quick shipment from our Memphis warehouse stocks of leading vitamins, antibiotics, growth factors and minerals. It means Personal Service, too, in helping with formulation, registration and in other ways when our customers need it. Call us.

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These colorful day-and-night signs are seen by 19,446,000 people every month from Maine to Michigan and south to the Carolinas.

Increased consumption of chicken, eggs, beef, turkey, pork and milk is the key to better prices and profits for producers.

That's why we are taking the lead in promoting these products to consumers with hundreds of outdoor signs, national and regional magazine advertising, colorful bumper strips and special distributor displays.

These activities, plus financial support for PENB and other industry promotional groups, benefit you by creating better markets for your meat, milk and eggs.

We're giving this job everything we've got — because we know that our success is dependent upon yours.

By golly, that's right. And it adds up to more than 200 million impressions a year in 17 states.

WIRTHMORE FEEDS — POULTRY DAIRY STOCK

WIRTHMORE

The Big Name in Farm Feeds

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Special agitating arms prevent bridging and assures quick, clean emptying of mix. Easy to install and operate with present equipment. Loads top or bottom—clean, fast . . . no waste. "Flinger" at top of conveyor tube thoroughly distributes ingredients—cuts mixing time. Bagger has positive, non-jamming cut-off valve, operating in a dust-tight housing. Ball bearing equipped screw conveyor is "balanced" for quiet, smooth operation. Motor mounted as desired. All-steel, electric welded construction throughout. Available in 3 capacities: 2000, 3000 and 4000 lbs.

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Important NEWS for Feed MIXERS • JOBBERS • DEALERS

GRAN-I-GRIT Research Has Proved That the Feeding of Larger Sizes of GRAN-I-GRIT Will INCREASE PROFIT of Egg and Broiler Producers without Adding One Cent to Costs

Both egg producers and broiler growers are continually searching for ways and methods that will reduce their costs and increase their profits.

By informing your customers of GRAN-I-GRIT'S New Grit Feeding Program you can show them how to make more money from your feed, which in turn will stimulate your sales.

Mr. Gurney C. Hodges, top broiler producer of Low Gap, North Carolina, states:

Records like this offer DEFINITE PROOF!

"I doubted the value of grit for broilers until I was persuaded recently to make a comparative test. The amazing results which I obtained are listed in adjoining column.

"I followed the grit manufacturer's recommendation and fed chick size grit for one week, growing size grit for the next two weeks, broiler size grit for the next three weeks and hen size grit until sold. The birds consumed 180 lbs. of chick and growing size grit and 450 lbs. of broiler and hen size grit.

"I was well pleased that feeding GRAN-I-GRIT made me $125.85 extra and believe that feeding the larger grit sizes was responsible for this outstanding result. I have used GRAN-I-GRIT on other broiler flocks with equally good results."

USING A SIDE BY SIDE TEST, MR. GURNEY C. HODGES MADE AN EXTRA $125.85 ON 4,000 BROILERS WITH LARGER SIZES OF GRAN-I-GRIT

	White Rocks Without Grit	White Rocks with GRAN-I-GRIT	
No. Birds Started 2/2/56	4,000	4,000	
No. Birds Sold 4/10/56	3,854	3,824	
Percentage Livability	96.35%	95.6%	
Age When Sold	9 wks., 5 days	9 wks., 5 days	
Average Weight per Bird	3.27 lbs.	3.479 lbs.	
Total Lbs. of Broilers Sold	12,620 lbs.	13,304 lbs.	
Bags Broiler Chow Fed	333	332	
Lbs. of Meat per 100 Lbs. Feed	37.89	40.07	
Lbs. of Feed per Lb. of Meat	2.638	2.49	
Broiler Selling Price per Lb.	19c	19c	
Receipts from Sale of Broilers	$2,397.80		$2,527.76
Total Cost Chicks, Feed, Sanitation	2,359.07		2,353.73
Labor Profit and Grit Cost	38.73		174.03
Cost of GRAN-I-GRIT 0 lbs. @ 1½c	0	630 lbs. @ 1½c	9.45
Labor Profit	38.73		164.58
Extra Profit from use of GRAN-I-GRIT	0		125.85

It's a Fact

GRAN-I-GRIT Has Eye Appeal For POULTRY OF ALL AGES

Chicks, broilers, pullets or layers must consume the proper amount of grit to get maximum results from feed and GRIT MUST HAVE EYE APPEAL before poultry will eat it.

Side by side tests on poultry farms and by leading poultry authorities have proven that poultry of all ages prefer a light gray grit with black specks . . . THE GRAN-I-GRIT TYPE . . . (as much as ten, fifteen to one) over grit of other colors.

Sharper Grinding Edges Release More Nutrients from your Feed!

GRAN-I-GRIT with the sharpest grinding edges ever cut, grinds feed finer in the gizzard. Finer grinding of feed releases more nutrients for every pound of feed consumed. These EXTRA valuable body building nutrients, that GRAN-I-GRIT gives you, are a great aid in speeding growth, body development and weight gains of broilers and in getting more profitable feed conversion.

Top broiler growers use GRAN-I-GRIT. They know from experience that GRAN-I-GRIT is the finest and best profit producing grit they can use. GRAN-I-GRIT is insoluble. It will not dissolve and does not change the mineral balance of the feed you use.

Get Full Details of GRAN-I-GRIT'S New Grit Feeding Program

We have a New GRAN-I-GRIT circular that gives full details on the New GRAN-I-GRIT Program of Feeding Larger Sizes of GRAN-I-GRIT . . . the program that is proving so successful with both egg producers and broiler growers. Write today for a Free Copy.

GRAN-I-GRIT is packed in 10-lb. Easy to Stack, Self Feeding Packs that save valuable storage space, time and labor, and in 25, 50 and 80-lb. multiwall paper bags.

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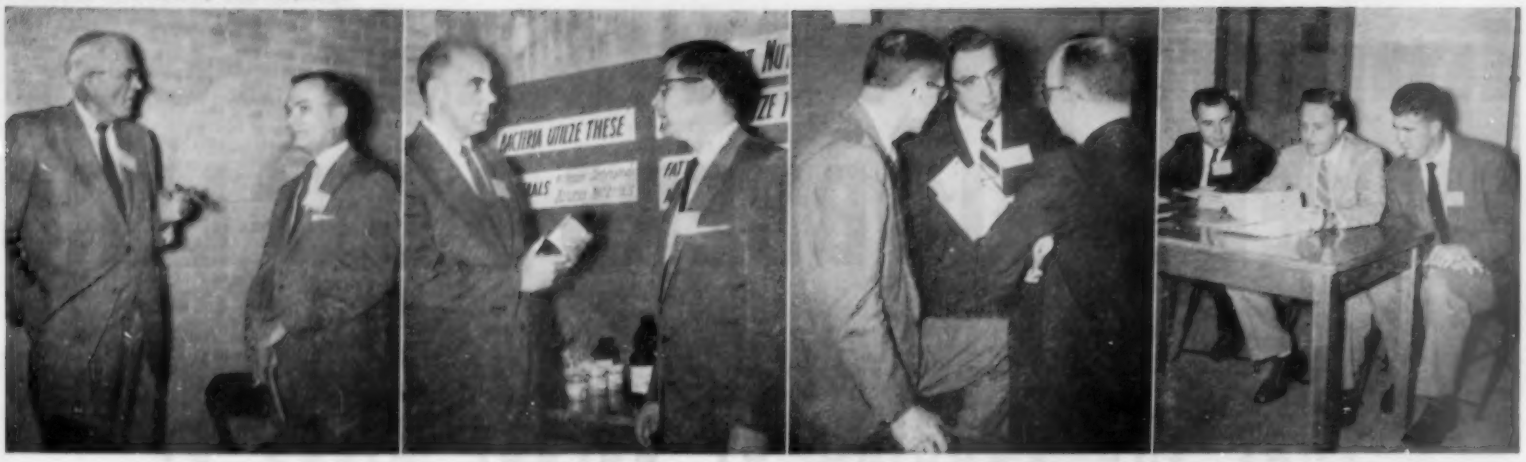
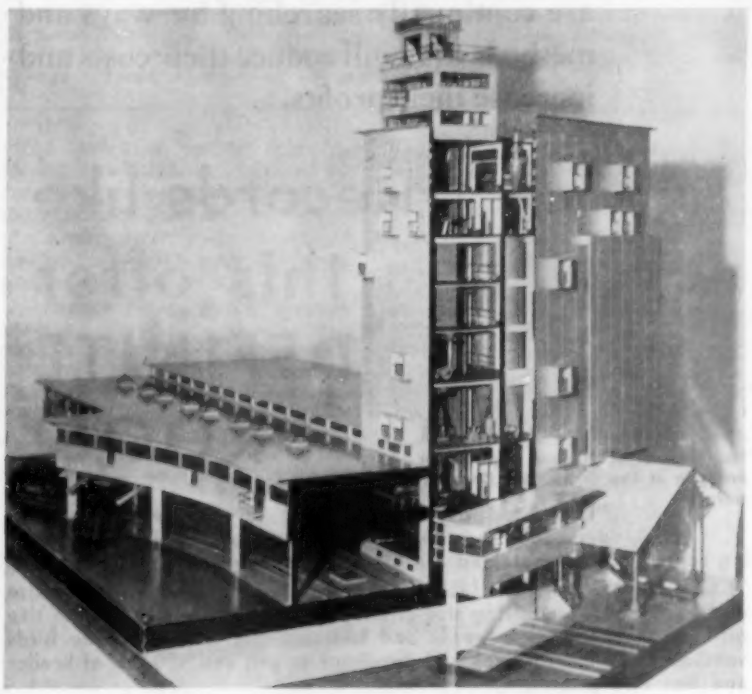


ARKANSAS SCENES—In the first photo above, Joseph C. Scott (left), vice president and sales manager, Cameron Feed Mills, Little Rock, discusses feed industry affairs with P. J. Burke, sales manager of the J. F. Weinmann Milling Co., Little Rock, at the recent annual meeting of the Arkansas Feed Manufacturers Assn., held in connection with the Arkansas Formula Feed Conference at Fayetteville. In the second picture, Dr. E. L. Stephenson of the department of animal industry at the university explains some of the work being done at the university to Roy Perrett, sales manager, Van Camp Laboratories, Terminal Island, Cal., between sessions of the feed conference at the university's new animal science building on the Fayetteville campus. Deep discussion at the feed conference involves the men shown in the third picture. They are, left to right, A. B. Turner; Collier Wendroth, O.K. Feed Mills, Ft. Smith, Ark., and John Gilbert, A. E. Staley Manufacturing Co., Decatur, Ill. In the fourth picture, James Dunaway, center, Thibault Milling Co., Little Rock, retiring president of the Arkansas Feed Manufacturers Assn., with his fellow officers, Jay F. Hill, Cameron Feed Mills, Little Rock, secretary-treasurer, and Ted Darragh, the Darragh Co., Little Rock, vice president, on the right, make some last minute program notes before the opening of the annual meeting.

Camera Views of the News

AT ARKANSAS MEETING—A fine point in one of the college displays at the recent Arkansas Formula Feed Conference at the University of Arkansas, Fayetteville, is discussed by P. F. Wertz (right), Hoffman-Taff, Inc., Springfield, Mo., with three of the Hess & Clark regional staff—(left to right) Ed Maddock, Jack Albert and Tom Peet. In the second picture a fast quip from Alton (Bill) Bowers, Marco Mills, Joplin, Mo., has two listeners laughing. In the center is Robert Morton, Abbott Laboratories, North Chicago, Ill., and at right is Alden Edwards, Corn Products Refining Co., Kansas City.



EUROPEAN MILL MODEL—Here is a picture of a scale model (1:50) of a feed mill nearing construction for the Duquesne company at Montfort, France. The plant was engineered by Nuove Reggiane in Italy, and it is to be equipped with electronic proportioning and sacking machinery provided by the Richardson Scale Co. This will be the first feed plant in Europe with electronic proportioning facilities. Models such as that pictured here are said to be used very frequently in Europe. In the above picture, one side of the model is moved partially away, showing part of the interior. The capacity of the plant will be about 30 metric tons hourly. Eighteen ingredients will be proportioned automatically for the main products, which are poultry feeds.

NEW ASSOCIATION-NEW OFFICERS—Heading the new National Feed Ingredients Assn., formed at Chicago Sept. 19 during the annual meeting of the National Mineral Feeds Assn., are the following officers, shown in picture No. 1, left to right: Peter W. Janss, Des Moines, executive secretary; J. J. O'Connor, Walnut Grove Products Co., Atlantic, Iowa, president; W. P. Mann, Merchants Chemical Co., Inc., Omaha, vice president; Art Swarzentruber, Vigortone Products, Inc., Cedar Rapids, Iowa, retiring president of the MNFA, and William A. Power, Puritan Laboratories, Inc., Des Moines, treasurer. C. S. Langen, Moorman Mfg. Co., Quincy, Ill., who was elected vice president of the NFIA, was not present for the picture. Some of the speakers at the annual meeting are shown in the other three pictures. In the second picture is Lloyd Burlingham, midwest editor, farmer and radio personality, who told the group "How Not to Sell Farmers." Shown in the third picture is Francis Kutish, Iowa State College economist, who discussed the livestock outlook for the coming year. Dr. R. C. Klussendorf, Commercial Solvents Corp., Terre Haute, Ind., speaks on zinc metabolism in the fourth photo.

Franklyn S. Harris

NUTRITION DIRECTOR — Franklyn S. Harris has joined Ubiko Life Guard Feeds, Columbus, Ohio, as director of nutrition, according to a recent announcement by John W. Eshelman, president. Mr. Harris formerly was with F. M. Stamper Mill, Moberly, Mo. He received undergraduate training at the University of Massachusetts and took his graduate work at the University of Tennessee. Prior to taking the Missouri position, Mr. Harris worked with Hermitage Mills, Nashville, Tenn. Ubiko Life Guard Feeds is a division of Eshelman Grain, Inc.

Meat Production Falls Below 1956 Levels

WASHINGTON—Production of red meat in commercial slaughter plants totaled 2,082 million pounds in August, according to the Crop Reporting Board of the U.S. Department of Agriculture.

The August output was 1% less than the July production and 3% below the 2,136-million-pound output for the same month last year. Commercial meat production includes slaughter in federally inspected plants and other commercial plants, but it does not include farm slaughter

For the year through August, red meat production totaled 16,855 million pounds. This was 3% less than the 17,447 million pounds produced during the same period in 1956. Of the January-August volume, 9,286 million pounds were beef, down 1% from last year; 958 million pounds were veal, down 2%; 6,137 million pounds were pork, down 8%; and 474 million pounds were mutton and lamb, down 2%.

The number of cattle slaughtered was up slightly, while the number of calves slaughtered was down 2%, hog slaughter was down 9%, and sheep and lamb slaughter was down 4%.

Poultry slaughter in August was 446 million pounds, ready-to-cook basis. Output in August was 11% above the month earlier, 1% above August, 1956, and 37% above the 1947-56 average for August.

15 COUNTIES NAMED

SACRAMENTO, CAL. — W. C. Jacobsen, California director of agriculture, has designated 15 counties as brucellosis control areas under provisions of law enacted at the 1957 legislative session. The action will permit cattle owners in the counties to proceed with a brucellosis certification program which also imposes restrictions on movement of cattle into the areas.

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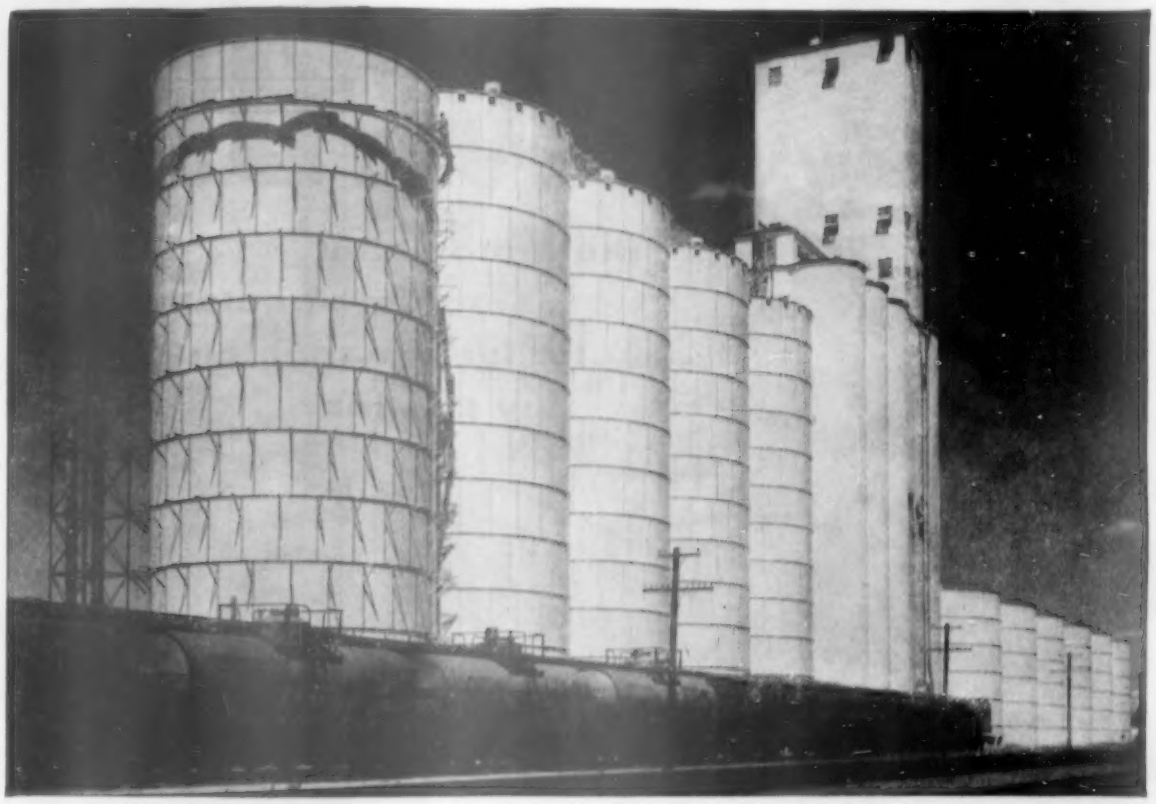

New High In Grain Protection!

BS&B Builds Nation's Tallest Large Diameter Steel Grain Tanks For Satisfied Old Customer

In 1956 Wagner Mills, Inc. erected 6 BS&B Bolted Steel Grain Tanks (extreme right in picture) each with a capacity of 92,500 bushels. This Schuyler, Nebraska firm was so completely satisfied with the 1956 installation that when 455,000 bushels additional capacity was required in 1957, BS&B was again called to do the job. To fill Wagner Mills' needs, BS&B turned out America's tallest large diameter bolted steel grain tanks, 96′ 10″ high x 38′ 7″ diameter—5 tanks, each with 91,000 bu. capacity (shown above, at left).

Versatility Cuts Idle Time

Wagner Mills originally stored wheat and corn in the BS&B Bolted Steel Tanks erected in 1956. Because of the complete seal formed by rubber-gasketed wall and roof joints, these tanks are now performing with equal satisfaction storing alfalfa pellets under low inert gas pressure.

Immediate Use . . . No Waiting Period

As soon as one of Wagner's BS&B Bolted Steel Grain Tanks was completed it was ready to store wheat or corn. When the picture above was taken, two of the new tanks were already full, although the last tank was still in the process of erection. Average erection time for tanks of this size (weather permitting) is ten days for each unit.

This vermin proof, insect tight form of grain and feed storage holds many advantages in savings and efficiency for you, too. Want to see how? Then let your BS&B Representative give you complete details. Or, write direct to...

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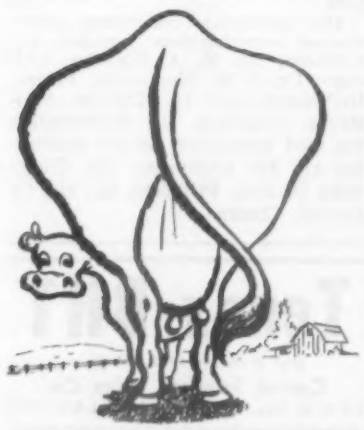

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INQUIRIES APPRECIATED

Nutrition Conference For Veterinarians in Illinois Scheduled

PEORIA HEIGHTS, ILL.—A nutrition conference for members of the Illinois State Veterinary Medical Assn. will be held Nov. 6 at the Pabst Brewing Co. Auditorium here.

Several representatives of the feed industry will join with college researchers and veterinarians in the presentation of the day-long program. One of the features of the meeting will be the showing of the film, "Old MacDonald," by R. L. Kathe, director of the agriculture service division of the American Feed Manufacturers Assn.

Chairman of the program is Dr. Morris Erdheim, Dawe's Laboratories, head of the nutrition committee of the Illinois veterinarians' group. Dexter Obenhaus, president of the Illinois Feed Assn., will be introduced.

Hog nutrition is the first subject to be discussed. Dr. S. W. Terrill, professor of animal science at the University of Illinois, will present the subject. Also scheduled for the morning is an address on cattle nutrition for veterinarians by Ralph McCall, manager of cattle feed research for Quaker Oats Co., and the showing of "Old MacDonald."

The afternoon session opens with an introduction of Dean M. Clark, executive secretary of the Illinois Feed Assn., and a discussion of dairy calf feeding by Dr. Karl E. Gardner, dairy scientist, University of Illinois.

Dr. C. A. Brandly, dean of the college of veterinary medicine at the University of Illinois, will discuss "Economic Aspects and Education Obligations of Poultry Practice," and Dr. John W. Bernotavicz, director of Gaines Research Kennels, Kankakee, Ill., will discuss the "Nutritional Aspects of Small Animal Practice."

A feed man's point of view of medicated feeds will be presented by Dr. E. I. Robertson, director of nutrition, John W. Eshelman & Sons, Lancaster, Pa., and the program will close with a panel discussion on the relationship between the veterinarian and the feed dealer. Members of the panel will be Dr. H. L. Marsh, veterinarian at Princeton, Ill.; Dr. Arthur C. Bolle, veterinarian at Jacksonville, Ill.; Dexter Obenhaus, Community Feed Mills, Princeton, and Richard E. Synvold, nutritionist for the M. D. King Milling Co., Pittsfield.

The conference committee representing veterinarians includes Dr. Erdheim; Dr. M. A. Schooley, Chicago; Dr. I. W. Moranville, Peoria; Dr. Marsh, and Dr. Charles Armstrong, Evanston, Ill. Representing the feed association on the committee are Mr. Obenhaus; Mr. Clark; Mike D. King, Pittsfield, Ill., and Cy Sievert, Chicago.

Dirk D. Young

APPOINTMENT — Dirk D. Young has been appointed district manager in the multiwall sales department of Hudson Pulp & Paper Corp. to cover Iowa and Nebraska. Mr. Young has had wide experience in the multiwall field. He lives in Des Moines. He attended the University of Wisconsin and the University of Illinois.

Tenox BHT
AGRICULTURAL GRADE

Before developing Tenox BHT-Agricultural Grade, Eastman consulted many people in the feed industry, to discover exactly what they wanted in an antioxidant for poultry feed. We asked them about their storage problems... we studied their blending machinery and methods... we asked their advice on the best particle size.

Using this information, coupled with our knowledge gained through years of experience in food antioxidants, we developed the new Agricultural Grade of Tenox BHT, designing it specifically to meet the needs that were expressed to us.

As a result, Tenox BHT-Agricultural Grade is supplied as free-flowing, non-dusting powder, in a particle size comparable to that of other feed components. It blends rapidly and homogeneously in mixing operations, and does not separate during handling or storage.

Tenox BHT-Agricultural Grade improves pigmentation, protects the vitamin content of your feed, and safeguards poultry against deficiency diseases such as encephalomalacia. To poultrymen, this means bringing more chicks to faster and more profitable maturity.

Since this is a new form, especially prepared for feed use, be sure you specify Agricultural Grade when ordering. For additional information concerning Tenox BHT-Agricultural Grade, write to EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City, 260 Madison Avenue; Framingham, Massachusetts, 65 Concord Street; Cincinnati, 1813 Carew Tower; Cleveland, 13212 Shaker Square; Chicago, 360 North Michigan Avenue; St. Louis, 10 South Brentwood Boulevard; Houston, 1300 Main Street. **West Coast: Wilson Meyer Co.,** San Francisco, 333 Montgomery Street; Los Angeles, 4800 District Boulevard; Portland, 520 Southwest Sixth Avenue; Salt Lake City, 73 South Main Street; Seattle, 821 Second Avenue.

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Enzymes in Animal Nutrition

The addition of enzymes to feeds has opened an entirely new area in the nutrition of livestock. While considerable interest has been aroused in the use of enzymes, it is generally agreed that the role of enzymes in animal nutrition needs further study.

The trend toward early weaning of pigs is partially responsible for bringing enzymes into the picture. Catron at Iowa State found that pigs could be weaned at one week of age on a feed high in skim milk. Since skim milk is a rather costly ingredient, soybean flour was used as a protein source. Lactose was added to make up the carbohydrate fraction. This feed mixture did not produce the weight gains obtained with dried skim milk. At the time it was thought that the baby pig probably lacked the enzymes needed to properly digest this feed. Experiments by workers at various experiment stations have since verified this.

Lewis, Hartman, Lin, Baker and Catron report in the September, 1957, issue of Agricultural and Food Chemistry that there is negligible pepsin activity present in the stomach of the pig at birth. They found that pepsin activity is low until the pig is about three weeks of age and that from the third to the sixth week there is a very rapid increase. These workers also found that the pH of the stomach of the baby pig is relatively acid from birth through six weeks of age. On the basis of this finding, they reason that the inability of the baby pig to utilize plant proteins adequately could be due to the lack of pepsin rather than the unfavorable pH for enzyme action. However, a group of workers at Ottawa, Canada, found the pH of the baby pig stomach to be 3 to 3.5, which is out of the range for maximum pepsin activity.

These variances in experimental results are sometimes found between laboratories, and the answer is probably found in a statement made by Iowa State workers: "Because of the large pig to pig, litter to litter, and laboratory (assay) variations encountered in these studies, the values reported herein should be considered with some reservation. What effects the genetics, prenatal and postnatal nutrition of the pig, environment or other factors may have on enzyme secretion are at present uncertain."

In the same studies reported by these Iowa workers, it was found that the baby pig, at birth, is capable of producing relatively high amounts of trypsin and that any subsequent increase in trypsin activity is due largely to an increased size of the pancreas.

Amylase Activity

In this same issue of Agricultural and Food Chemistry, Hudman, Friend, Hartman, Ashton and Catron also reported work on the baby pig pancreatic and salivary amylases.

They found that the average amylase activity per gram of dry pancreatic tissue was low at birth and increased rapidly up to 28 days, after which time it remained at about the same level. The pancreatic maltase activity was so low that the role of pancreatic maltase in the baby pig is probably of little significance. The saliva of the baby pig from 1 to 49 days of age, was comparatively low in amylase activity.

Kitts, Bailey and Wood in 1956 also reported that the amylase activity in the baby pig is low at birth and that it increases markedly with age from 1 to 35 days. They also found that pancreatic lipase is of a high order at birth and remains high as growth proceeds. This group also found that lactase activity was of a high order from birth through the first two weeks of life, at which time a sharp decline in activity was noted which reached a minimal level after three to four weeks. Sucrase and maltase activity were found to increase from negligible levels at birth to a maximum after 25 days.

On the basis of the studies on the amylolytic enzymes in the baby pig, one would assume that supplementation of the feed with these enzymes would be beneficial. Cunningham and Brisson gave a report in the May, 1957, issue of the Journal of Animal Science on some work with supplementing baby pig diets with amylases. They found that two-day-old pigs did no better on a high starch-casein diet when pancreatic and malt amylases were added than when they were not.

Becker of Illinois compared various carbohydrates in a synthetic baby pig milk. He found no difference in the nutritive value of dextrose, lactose, dextrin or corn starch for pigs

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Mail coupon for 25 of these Dog Drawing Books—they're FREE...

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7 to 25 days of age. This would indicate that at this age, while the baby pig is best equipped to use lactose sugar, it can also utilize the others.

It is quite apparent at the present time that a large part of the research with enzymes in regard to nutrition is in terms of the pig's physical make-up; that is, whether it has or has not certain enzymes, how they function, and what conditions are best suited for maximum activity of specific enzymes. This is research that is needed.

It is pretty well agreed at the present time that the baby pig at birth is not very well equipped to handle proteins and carbohydrates in feeds other than those in natural milks. The baby pig can, however, handle fats from different sources provided they consist primarily of the short chain fatty acids.

Some hog feed formulators are now advocating early weaning of baby pigs with enzyme-supplemented feeds. Thus far, it appears, not many farmers are following this program. The cost of the recommended pepsin level in the feed is a deterrent.

Also, experiment station results have not been consistent.

Enzymes, both proteolytic and amylolytic, have failed to improve natural chick rations that normally produce good growth. However, earlier this year, Washington State College researchers reported on work with the amylolytic enzyme "clarase." They found that barley which is normally considered to have 80 to 90% the nutritional value of corn in chick rations was made equal to corn nutritionally by the addition of the amylolytic enzyme "clarase." This enzyme is now being offered commercially for use in "upgrading" barley, rye and other feedstuffs in livestock rations.

While it is yet too soon to determine the acceptance or the results of the use of this enzyme, it is quite easy to see the potential of such enzyme supplementation should it prove highly successful.

With the advent of high-energy diets for poultry, millfeeds were gradually removed from poultry rations, so that very little, if any, millfeeds are currently used for this purpose. If the use of enzymes could up-grade millfeeds, for example, so that they would compare more favorably with corn, significant savings could be realized in the cost of poultry feeds and more millfeeds could be utilized.

California Cattleman Named 'Man of Year'

SAN MARTIN, CAL.—John Baumgartner, Jr., livestock raiser from San Martin in Santa Clara County, has been named "livestock man of the year" in California by the San Francisco Chamber of Commerce.

E. D. Maloney, president of the Chamber, will present Mr. Baumgartner with a silver tray in a public ceremony marking the occasion Nov. 2 at the 1957 Grand National Livestock Exposition at the Cow Palace in San Francisco.

Mr. Baumgartner owns a 3,500-acre cattle ranch in Santa Clara County, and produces from 75 to 100 lb. of beef annually an acre, or between 300,000 to 350,000 lb. The average is only about 15 lb. of beef an acre in California. As chairman of the steering committee for the California Livestock and Meat Marketing Conference, Mr. Baumgartner is credited with having led the fight to eliminate misleading advertising in meat, supported more research on meat shrinkage, initiated a program to combat livestock losses because of handling, parasites and diseases, and created a spirit of widespread cooperation among cattlemen and between cattlemen and retailers.

The 1957 Grand National will run Nov. 1-10 and will feature livestock from all over the country. There will be displays by feed mills and other firms. Some $93,818 will be given in prizes, including shows and sales of championship stock.

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There Is Always a Way to Solve Problems

By Al P. Nelson

A lean, brown-haired boy of about 12 came slowly into Joe Brooks' office. He stood and waited until Joe looked up from his desk. The feed dealer recognized Tom Harrigan who lived with his grandmother at the edge of town. Tom's grandmother had a flock of 50 hens, a couple of pigs and a cow, besides a sizable garden, and it was Tommy who did most of the work around the place, since grandmother had been quite sick during the past year.

"Hello, Tom," said Joe cheerily. "How are the chickens laying?"

"Oh, they are laying very well," Tom said, "and we've got steady customers for our eggs. But it's this feed bill of $11.75 that I'm worryin' about. Honest, Mr. Brooks, I feel pretty bad about not payin' it before. Grandma's been pretty sick the last few months and a lot of our money has been goin' for heart pills and things like that."

"I know, Tom," Joe said kindly, looking at the bill the boy had handed him. "We haven't been pressing you for payment, have we? Of course, we do send out statements every month. That's business."

Real Trouble

The boy nodded. "We've been doin' so well the last few years, Granny and me. She worked hard with the chickens and the garden, and I helped her. And then my newspaper route brings in somethin'. But we can't make all expenses much longer. We've got to apply for welfare aid."

Again Joe nodded his head in sympathy. "Well, don't feel badly about that, Tommy. There are a lot of old people who have to get aid like this. Granny owns her home and two acres of land, doesn't she?"

"Yes," said the boy, "and we've managed to keep it clear of debt. But now the county welfare wants to take what they call a lien or somethin', for the amount of aid Granny will get. And she feels terrible about it. She says she hasn't been a charity patient ever in her life, and she doesn't want to be one now. I wish I could help her, Mr. Brooks."

"I know just how you feel, Tommy," said the dealer, "but it's too big a job for a young fellow like you. You're not ready to take all the responsibilities of supporting a home. You've helped her a lot, and I know you're going to help her some more. But you tell Granny she needn't be ashamed to take welfare aid from the county."

"Why not?" asked the puzzled boy.

It's Like a Loan

"Because she isn't getting charity money from them," Joe explained. "They are just loanin' her money on her house and land. When Granny dies, the county welfare will have to be paid back out of what you get for the sale of her property."

The boy brightened. "Oh, is that the way it is? Then she's really usin' her own money. It's like takin' it out of the bank."

Joe nodded. "Of course it is, in your Granny's case. But some people get welfare aid that don't have any houses. In that case it's a straight out and out gift by the county. But not in Granny's case. Do you think you can explain that to her?

The lean boy swallowed hard. "I'll try. Gee, that's gonna make her feel much better, Mr. Brooks. I'm worried about my Granny. She's all I got and I love her very much. Sometimes, sometimes I'm afraid I'm gonna lose her, she gets so pale lookin' and tired."

"Well, Tommy," said Joe gently, "we all have to die sometime, and

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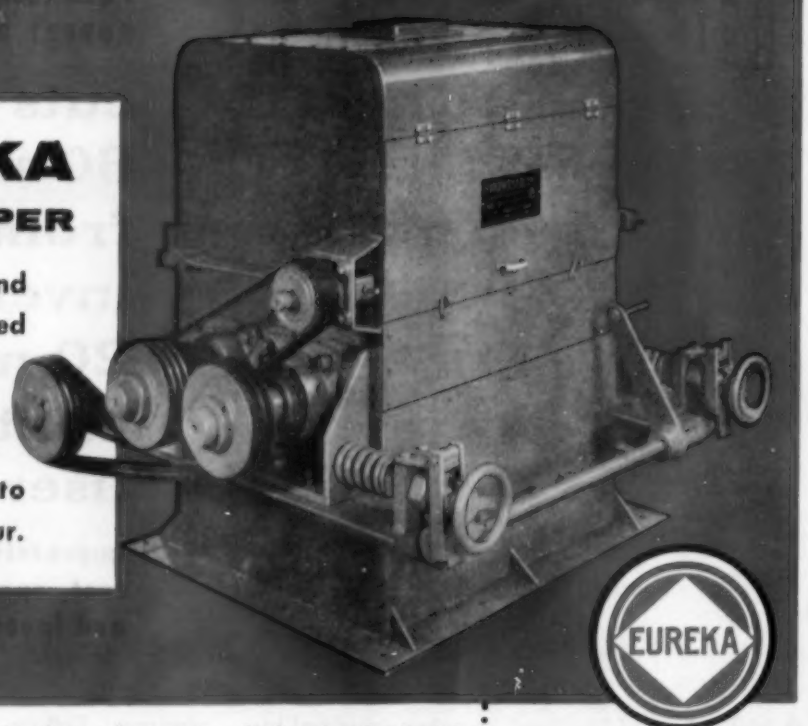

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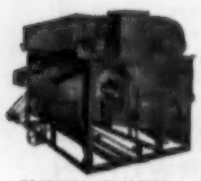
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lots of us get worried when those we love get tired and thin. We just have to suffer along, that's all, after we've seen that they consult a doctor."

"Yes, I guess so," said the boy, a trace of tears in his eyes. "But Granny's been so good to me all these years. It seems a shame—" he broke off.

"Tommy," said Joe briskly, "do you have a little spare time now and then, after school or on Saturdays?"

"I will pretty soon," Tommy said. "The garden is harvested and I have time left. Why?"

Joe Brooks leaned back in his chair. "Well, we've got an awful lot of sweeping to do around this mill and store, and all of us are so busy waiting on farmers that somehow we never get a chance to do the job often enough. I like a clean store and I think customers do. I think they look around a clean store more than they do a messy store and they buy more in a clean store. I could use a boy around here one or two hours a day sweeping, dusting, cleaning counters and merchandise and doing odd jobs. I figure you could work off the $11.75 feed bill in a mighty short time."

The boy's eyes lighted eagerly. "Gee, Mr. Brooks, I'd love to try it. When do you want me to start?"

"Go home and talk it over with Granny," Joe said kindly. "Then come to work tomorrow or the next day, whenever you can make it. We'll work out a schedule."

"Gosh, I will," Tommy said quickly.

"And after you've got the feed bill worked off," Joe suggested, "if I see you've the makings of a good feed man, I'll have other jobs around here for you to do, errands, helping me with the monthly bulletin, turning the mimeograph, sorting sheets, stuffing envelopes. We're a busy bunch around here."

"I like to be busy," Tommy said happily. "Thanks, Mr. Brooks. You made me feel a lot better."

Joe smiled. "Tommy, what does Granny like to eat—something special?"

"Bon bons," Tommy replied quickly. "She's always tellin' me how many she ate when she was a girl. Once I bought her three at the Elite Candy Shop and she ate only half a bon bon every day to make 'em last."

Joe dug into his pocket. "Tommy, how about you and me going 50-50 on a little treat for Granny? Let's buy her a dollar's worth of bon bons, and you can get them at the Elite right now on your way home. That will be 50¢ for you and 50¢ for me. Guess we can stand it." Then seeing the momentary embarrassment in Tommy's eyes, Joe went on, "I'll pay for the bon bons right now, and we'll add your 50¢ to the $11.75 feed bill you are going to work off. How's that?"

Tommy Harrigan looked very relieved, and very happy. "Oh, gosh, that'll be wonderful, Mr. Brooks. When I tell Granny the good news, she just isn't gonna believe it. She isn't gonna believe it! Bon bons! I can see her gettin' excited right now."

Kentucky Announces Joint Dairy Meetings

LEXINGTON, KY.—A series of 10 dairy meetings will be held in Kentucky in October, under the sponsorship of the University of Kentucky, the American Dairy Assn., the Kentucky Farm Bureau and the Kentucky Artificial Breeders' Assn.

The sessions will include brucellosis eradication, needed legislation, artificial breeding, dairy research and the "weigh-a-day" program.

The first meetings will be held Oct. 28 at Lawrenceburg and Russell Spring and will continue on Oct. 29 at Leitchfield and Berea; Oct. 30, Bowling Green and West Liberty; Oct. 31 at Madisonville and Maysville, and Nov. 1, at Mayfield and Owenton.

McCabe Installation

MINNEAPOLIS—Installation of a 50-h.p. pellet mill at the McCabe Co. plant in Hunter, N.D., has been announced by Ben McCabe, president of the Minneapolis firm.

The new pellet mill is being installed for manufacture of barley pellets for hog feeding. A machine to crumble poultry feed is also part of the improvement program. The existing grinding and mixing plant is being altered to accommodate the pellet mill, which will offer custom preparations in addition to commercial feeds for hogs and cattle.

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Cages Don't Give More Egg Profits, Economist States

COLUMBIA, MO.—There is no conclusive proof that the cage method of egg production is superior to other systems, according to R. K. Noles, University of Illinois agricultural economist.

Speaking at the annual meeting of the Poultry Science Assn. at the University of Missouri, Mr. Noles listed several points for and against the cage laying system.

Housing investment per bird in a single-deck system is more than for a floor system, but the investment per bird is less when the cages are double decked, he said.

For example, he said, a house designed for 1,000 single-decked cages would take about 3,770 sq. ft. Figuring 3 sq. ft. per bird, this same house would handle about 1,250 birds on the floor. However, if cages were double decked, the house would handle 2,000 birds.

Equipment for watering, feeding and nest space will cost at least 50¢ per bird more with a cage laying system when compared to a floor system, he stated.

Production records kept by cage owners are given as an advantage to make culling more accurate, he said, but because of the large amount of time required, many cage operators don't keep records and are culling birds on the basis of their appearance.

Cage operators have also found that culling on the basis of a required number of eggs in a given period results in excessively heavy culling and a loss of income, Mr. Noles pointed out.

Earlier culling in a cage system can mean a lower mortality rate. However, he said that where cage operators have shifted to culling on appearance, the cage system has no advantage.

Cannibalism and competition between birds are eliminated in cages. But floor operators can allow adequate space and debeak to overcome these problems, he pointed out.

Cage layers seem to have less coccidiosis and roundworms, but bronchial diseases and paralysis are more frequent.

Mr. Noles points out that one of the biggest disadvantages for cage layers is in the labor requirement. Feeding takes more labor since there are more linear feet of feeding space. When records are kept, egg gathering takes more time. The watering system requires individual attention, and manure management and removal also add to the labor required.

He stated that double-decked cages, which have an advantage in investment costs for house and equipment, also have a definite disadvantage in labor required and physical effort involved. They require more stretching and bending by the operators in gathering eggs, feeding and cleaning.

Fly control is a major problem in a cage system, he said, and eggs laid in cages are often dirtier and require more cleaning than with the floor system.

With higher labor and management requirements in cages, Mr. Noles concluded that it will be difficult to keep cage layer costs comparable to floor layer costs.

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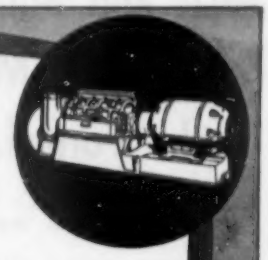

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Meat and Bone Scraps, Poultry By-Products Meal and Feather Meal In the Formulation of Poultry Feeds

By Dr. W. P. Crawford and Dr. J. R. Couch
Texas Agricultural Experiment Station

EDITOR'S NOTE: The accompanying article is a summary of information on the nutritional value and use of meat and bone scraps, poultry by-products meal and feather meal in poultry feeds. The authors, members of the staff of the poultry science department at Texas A&M College, discuss such things as amino acids, energy, unidentified factors and phosphorus in relation to the use of these animal by-products in feed, and they make recommendations on use of the products. This article is the text of a paper presented by Dr. Couch at the annual convention of the seventh regional area of the National Renderers Assn. in Dallas.

v v

Meat and bone scrap and meat meal or meat scraps have been added to poultry feed formulas for a number of years with very satisfactory results. Prior to the discovery of vitamin B_{12} this ingredient was valued as a rich source of the so-called "animal protein factor."

According to the official definitions and standards of commercial feeds as adopted by the Association of American Feed Control Officials, "meat meal or meat scrap is the finely ground, dry-rendered residue from animal tissues exclusive of hair, hoof, horn, hide trimmings, blood meal, and stomach contents, except in such traces as might occur unavoidably in good factory practice. When these products contain more than 4.4% phosphorus, they shall be designated either as meat and bone meal or meat and bone scrap. If the product bears a name descriptive of its kind, composition, or origin, it must correspond thereto and must be designated according to its protein content."

In recent years there has been a considerable increase in the interest shown in hydrolyzed feather meal and poultry offal meal as components of poultry feeds. It has been estimated

Dr. J. R. Couch

that sufficient poultry feathers are available in the U.S. for an annual production of from 50,000 to 60,000 tons of hydrolyzed feather meal.

"Hydrolyzed poultry feathers are defined as the product resulting from the treatment under pressure of clean, undecomposed feathers from slaughtered poultry, free of additives, and/or accelerators. Not less than 70% of its crude protein content shall consist of digestible protein."

"Poultry by-product meal is defined as the by-product of poultry processing plants consisting of the ground, dry-rendered, clean, wholesome parts of the carcasses of slaughtered poultry, such as head, feet, undeveloped eggs, gizzard and intestines, exclusive of feather and gizzard and intestinal contents, except in such trace amounts as might occur unavoidably in good factory practice."

Processing

Several methods have been suggested for treating poultry offal and feathers. Binkley and Vasak (1) described a cooking process in which the feathers were treated with saturated steam at pressures of 40-60 lb. per square inch for 30 to 60 min. along with continual agitation. After the cooking process the feathers are dried and ground to produce a free flowing meal of relatively high density. Sullivan and Stephenson (2) found that greatest chick growth was obtained when the feathers were cooked with 31 lb. of steam pressure for one hour.

A satisfactory meat scrap can be produced from poultry offal by employing standard dry rendering procedures.

In the formulation of poultry feeds, it is more important to consider the quality of the protein supplement than the amount of protein supplied in the diet. It is known that feeds which contain mixtures of animal and

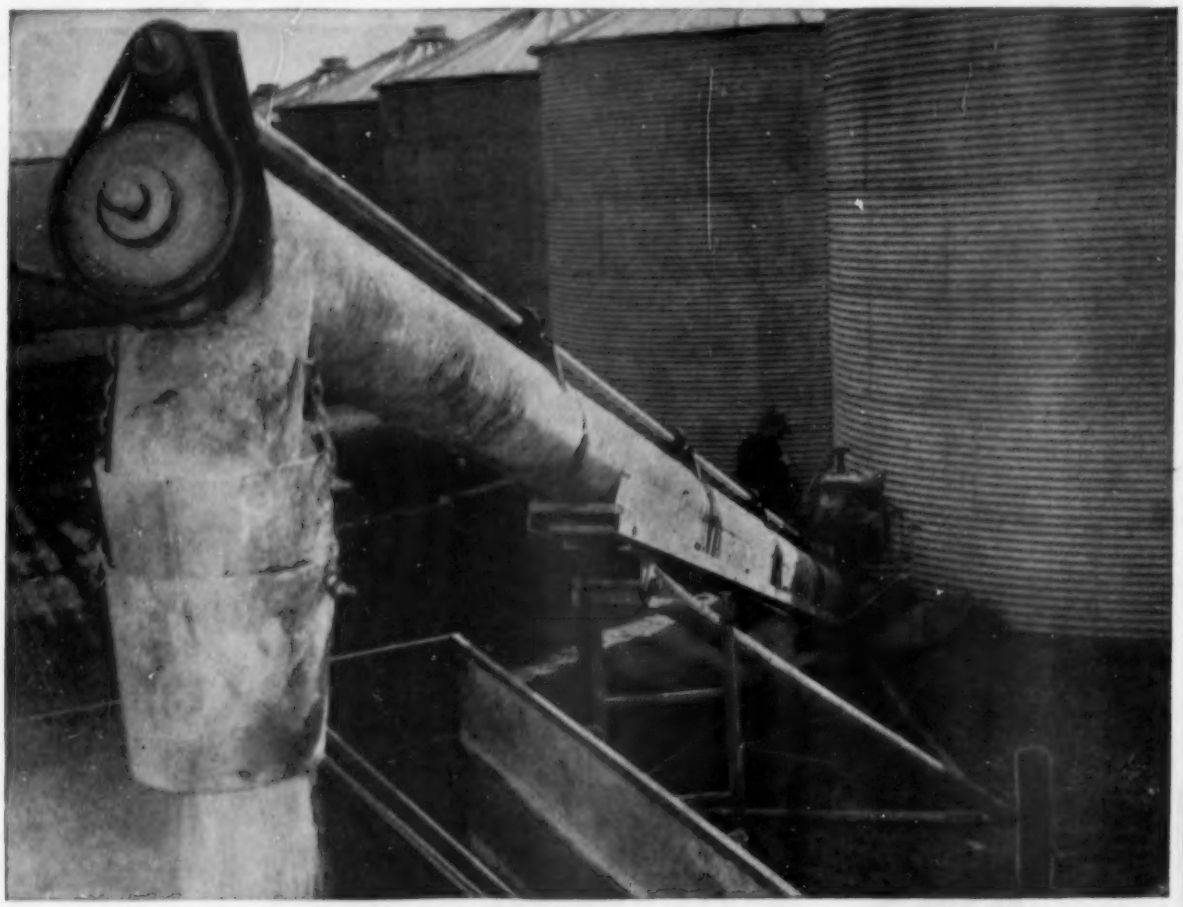

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TABLE 1. Amino Acid Content
Per cent of protein

	45%* SOM	—Meat scrap*— 45%	50%	85% Feather meal†	55% Poultry by-prod. meal‡
Arginine	7.46	7.46	7.24	6.41	6.81
Histidine	2.49	1.79	1.74	0.46	1.47
Lysine	6.17	5.49	5.48	1.76	6.97
Leucine	7.69	6.53	6.24	8.48	5.14
Isoleucine	5.50	3.26	3.36	4.33	5.72
Methionine	1.39	1.41	1.34	0.58	1.14
Cystine	1.47	1.00	1.20	3.55	1.79
Phenylalanine	4.86	3.82	3.42	4.31	4.12
Threonine	4.03	3.62	3.28	4.51	4.94
Tryptophan	1.69	0.73	0.69	0.66	0.34
Valine	5.40	5.28	4.77	7.45	5.60

*Lyman, Kuiken and Hale, Journal of Agricultural and Food Chemistry, 4:1008 (1956).
†Gregory, Wilder and Ostby, Poultry Sci., 34:518 (1955).
‡J. R. Couch, unpublished data.

TABLE 2. Amino Acid Content
Per cent of sample

	45%* SOM	—Meat scrap*— 45%	50%	85% Feather meal†	55% Poultry by-prod. meal‡
Arginine	3.38	3.38	3.79	5.62	4.60
Histidine	1.12	0.81	0.91	0.40	0.92
Lysine	2.79	2.49	2.87	1.55	4.57
Leucine	3.48	2.96	3.27	7.43	3.45
Isoleucine	2.49	1.48	1.76	3.79	3.92
Methionine	0.93	0.64	0.70	0.51	0.74
Cystine	0.62	0.30	0.38	3.09	1.00
Phenylalanine	4.40	1.73	3.77	3.77	2.83
Threonine	2.83	1.64	1.72	3.96	3.38
Tryptophan	1.16	0.33	0.36	0.57	0.23
Valine	4.09	2.38	2.50	7.46	3.17

*Lyman, Kuiken and Hale, Journal of Agricultural and Food Chemistry, 4:1008 (1956).
†Gregory, Wilder and Ostby, Poultry Sci., 34:518 (1955).
‡J. R. Couch, unpublished data.

vegetable proteins generally produce better results when supplemented with sources of unidentified growth factors.

Amino Acids in Supplements

Some of the factors affecting protein quality are the method of preparation, storage condition, level of nutrition, kind and amount of the different protein supplements, but probably the most important is the amino acid make-up and balance in the feed.

The average amino acid contents of soybean oil meal, meat scraps, feather meal and poultry by-product are compiled in Tables 1 and 2.

Both 45% and 50% meat and bone scraps are low in the amino acids histidine, methionine, cystine and tryptophan. This is true for all of the animal protein supplements under discussion, with the exception that feather meal is an excellent source of cystine. This may be one of the explanations for the fact that feather meal has produced good results in some experiments without the addition of methionine to the diet. It is known that cystine is not an essential amino acid but does spare methionine. The fact that feather meal contains a large amount of cystine in comparison to other protein concentrates is certainly a point in favor of the use of this ingredient in poultry feed formulations. It can be seen that poultry feeds containing a combination of soybean meal and the animal by-products would more nearly meet the recommended levels than either alone. One exception to this might be methionine. As a general rule feed grade methionine is added to a poultry feed to insure adequate levels in the formulas.

The amino acid analyses of meat scraps, feather meal and poultry by-product meal which have been reported (2-10) show a considerable amount of variation. The processing undoubtedly exerts a great influence upon the amino acid availability and consequently on the protein quality.

Energy as a Consideration

The energy content of poultry feeds is the subject of considerable interest at the present time. It is known that the protein requirement is interrelated with the productive energy content of the feed. If the productive energy values of Fraps are studied it is noted that 44% soybean oil meal contains 570 Calories per pound and 50% soybean meal has 650 Calories per pound. It is noted that 45% meat and bone scraps contains 660 Calories, the 50% meal contains 720 Calories and 55% meat scraps has 760 Calories per pound. Eighty-five percent protein feather meal has 800, and 56% protein poultry by-product meal has 880 productive energy Calories per pound.

The use of meat scrap, feather meal and poultry by-product meal not only provides a more optimum amino acid balance but will also supply more energy per pound of protein than supplied by soybean oil meal, either 44% or 50% protein. With Calorie/protein ratios of 42/1 in chick starter and broiler starter feeds and up to 48-50/1 in broiler finisher feeds, it can be seen that the higher energy content of animal protein concentrates is of extreme importance in the formulation of modern poultry feeds.

In the case of formulas containing low energy carbohydrate feeds such as oats, wheat bran, wheat shorts and low levels of fat, the animal protein concentrates would help raise the caloric density of the complete feed.

During the last seven or eight years there has been a vast amount of research conducted on the unidentified growth factors of various ingredients. As data have been compiled, these factors have been sorted into general groups and are now referred to as the "fish factor," the "whey factor," the "fermentation factor," the "grass juice factor" and the "protein factor." It is felt that an organic factor is partially responsible for the growth response from these sources of unidentified factors. Recent work at Texas A&M College and Cornell University has pointed out the existence of an unidentified inorganic factor. There may be one unidentified mineral or a combination or balance of several involved.

Research work has indicated that the "fish meal" factor found in condensed fish solubles, fish meal and fermentation residues is also present in meat and bone scraps and poultry by-product meal.

There is evidence suggesting that feather meal contains the inorganic growth factor found in fish products. Lillie, Sizemore and Denton (11) found that 3% feather meal replaced 4% fish meal with respect to growth and feed efficiency. It was also found that with a constant protein level and a well fortified diet, the feather meal replaced fish meal at a rate of 4% for 6%. Romoser (12) and others (13-16) have obtained similar results.

Feather meal may contain a hatchability factor as well as a growth factor. Harms and Goff (17) increased hatchability by the addition of 5% feather meal to the diet. Egg production was increased by adding feather meal as well as poultry by-product meal and meat scraps.

Several workers have found that 2.5-3% feather meal in a well fortified diet would produce greater gains than were obtained with the vegetable protein diet unsupplemented.

The possibility of the "fish factor"

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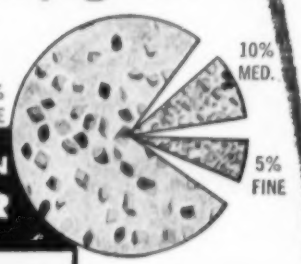

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FE/445

being supplied by poultry by-product meal has been pointed out in the work of Romoser (12) who found that this ingredient would replace fish meal up to the 7.5% level. Both fish meal and poultry by-product meal increased growth over that obtained with a soybean meal-corn basal. Naber and Morgan (15) reported that both feather meal and poultry by-product meal not only contain the "fish factor" but may also be sources of the unidentified "whey factor."

There has been much work reported on the use of meat and bone scraps in poultry feeds. It has been found that moderately high levels can be used in a high energy broiler ration and will produce excellent results (14, 15, 18, 20). Wilder (18) added meat scraps up to 20% level and obtained economical results. The optimum levels were between 2 and 8% meat and bone scraps in the formula. Bird (19) found that meat scraps would replace fish meal in turkey starter diets.

Phosphorus

The chicken and turkey require phosphorus for the purpose of bone formation and maintenance, as a constituent of many organic compounds necessary for bone function and metabolism, and as an integral part of many enzyme systems, for the proper maintenance of the acid-base equilibrium and for many functions not yet identified. The poultry nutritionist must consider sources of phosphorus in formulating poultry feeds. Meat and bone scraps contributes a significant amount of phosphorus when added to poultry feeds. Meat and bone scraps at a level of 100 lb. per ton will furnish as much phosphorus as 26.6 lb. of an 18% phosphorus supplement, and if used at a level of 150 lb. per ton, will furnish as much phosphorus as 40 lb. of an 18% supplement. The above emphasizes the fact that meat and bone scraps contributes a significant amount of phosphorus to poultry feed formulas. This should certainly be taken into account when evaluating meat and bone scraps as a feed ingredient.

Poultry by-product meal will contribute only about 1.7 lb. of phosphorus per ton when used at the 100-lb. level. This is equivalent to less than 10 lb. per ton of an 18% phosphorus supplement. Thus it is apparent that a poultry by-product meal is not as significant a phosphorus contributor in feed formulas as is meat and bone scraps.

Summary and Recommendations

An evaluation of the literature, coupled with the writer's experience in research work and feed formulations, lead to the following recommendations and conclusions:

1. Meat and bone scraps. It is recommended that meat and bone scraps be used in poultry feed formulas at levels ranging from 100 to 150 lb. per ton. The amino acid make-up of this ingredient has been discussed. It is apparent that meat and bone scraps must be fed along with other protein supplements in order to obtain the proper quantity and balance of the essential amino acids required by chickens and turkeys. This ingredient contributes significant quantities of phosphorus to the feed formulas when used at the recommended levels mentioned above. Meat and bone scraps contains some vitamin B_{12} and contributes some of the unidentified growth factors to the chicken and turkey feed formula.

2. Poultry by-product meal contains a significant amount of unidentified growth factor activity and has been used to replace fish meal in poultry feed formulas. The amino acid composition of this ingredient again points to the fact that it must be used with other protein supplements; the recommended level is in the range of 100 to 200 lb. per ton. It is the opinion of the writer that the present use should be limited to 100 to 150 lb. per ton, which is in line with the cur-

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rent price of poultry by-product meal.

3. Hydrolyzed poultry feathers or feather meal is being used at levels ranging from 50 to 100 lb. per ton. The writer would not recommend the usage of feather meal at a level in excess of 60 lb. per ton. Feather meal can definitely be used as a protein supplement at a level of 50 to 60 lb. per ton to increase the energy content of the feed. This can readily be ascertained by the nutritionist since the protein content is high and additional grain can be substituted in the formula.

4. It should be pointed out that all three ingredients in this paper—meat and bone scraps, poultry by-product meal, and hydrolyzed poultry feathers—can be used to advantage to increase the productive energy content of high energy poultry feed formulas. All three of the ingredients have a higher productive energy than that of 44 or 50% protein soybean oil meal. It is wise to follow recommended procedures of processing which will produce ingredients of the highest protein quality and amino acid availability. The writer strongly recommends that a diluent such as calcium carbonate not be added to feather meal or poultry by-product meal either during processing or before grinding.

v v

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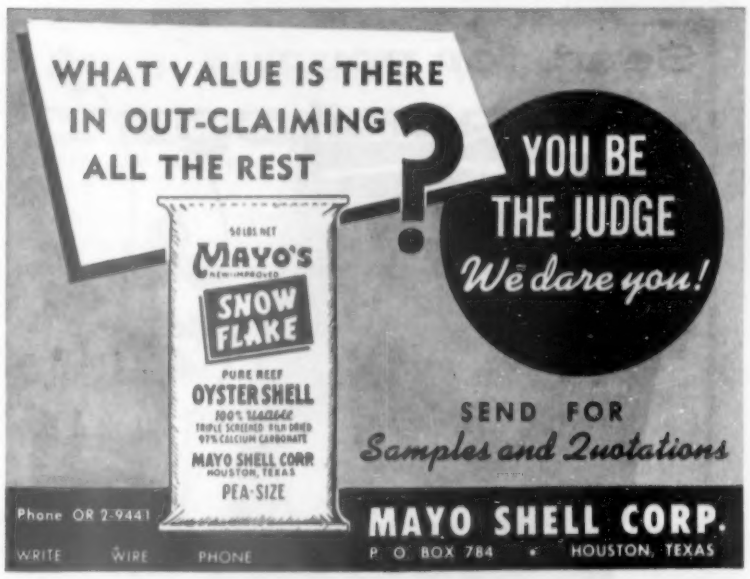
ST. CHARLES, ILL.—A new 10-panel folder, "9 Easy Ways to Cook Eggs," is available from the Poultry & Egg National Board for use in motivating consumers to form the habit of eating more eggs, Lloyd H. Geil, PENB general manager, reports.

The entire folder fits into the demands of the times for quick and easy preparation of all foods, Mr. Geil says. It can be used as a mailing insert and hand-out piece for consumers and as a teaching aid in schools.

Space is provided on the back panel for imprinting or stamping a firm's name. The folder is printed in yellow and black on white stock and is 3½ by 8¼ in. in size. Information about obtaining orders may be obtained from the Poultry & Egg National Board, 8 South Michigan Ave., Chicago 3, Ill.



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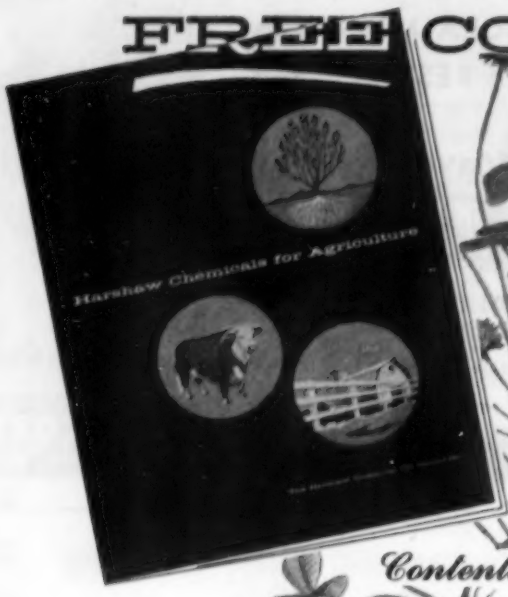

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Contents

	Page
Facts About The Harshaw Chemical Company	2
Aerial View—General Offices & Research Laboratories	4
Essential Trace Elements in Plant & Animal Nutrition	5
Trace Mineral Compounds	9
Fungicides	12
Weed Killers	14
Miscellaneous Agricultural Compounds	15
Available Literature	16
Supplementary Reading	16
Location of Sales Offices and Warehouses	17

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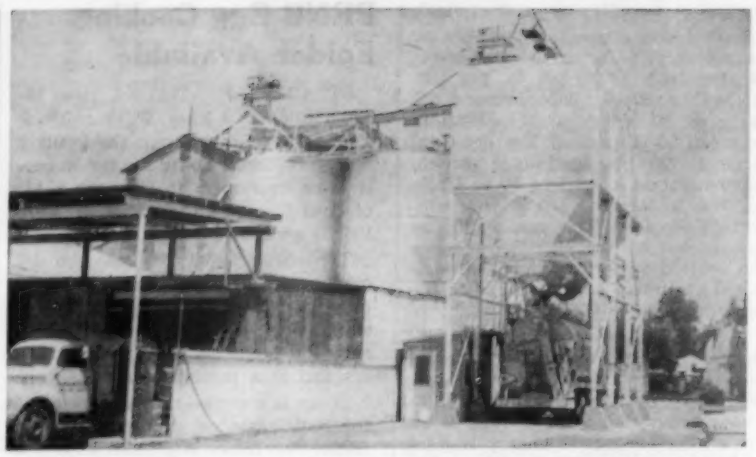

BULK STORAGE BINS—A view of the overhead storage bins at the Redland (Cal.) Feed & Milling Co. plant can be seen here. A 13-ton delivery truck is being loaded. The truck has five compartments and company officials say that the overhead bins and several bulk feed trucks have speeded deliveries by 15% over the former method.

For Bigger Profits

Redlands, Cal., Feed Firm Caters To Owners of Big Laying Flocks

By Jess Blair

The Redland (Cal.) Feed & Milling Co. has good reason for specializing in poultry feed, which comprises 98% of its sales.

G. DeJong

Redlands is situated in an area where laying flocks — mostly caged birds — have become concentrated and where egg production has gone steadily upward. It was logical, then, that Redlands Feed & Milling decided sometime ago to cater to the large scale egg producers.

In this area, a producer with 10,000 hens is considered a small operator. Many operators have from 30,000 to 50,000 birds. One owner keeps 200,000 layers.

According to G. DeJong, office manager, dealing with large operators differs from selling to a grower who needs a few bags of feed at one time for his backyard flock.

"To keep the large operator's business," Mr. DeJong says, "we must conform to their needs and way of doing business. This means we must be equipped to turn out large orders of feed on short notice. It also means that we must know our business, not only with feeds but poultry nutrition, diseases, marketing and every other phase of the business."

New Equipment Installed

To keep up with expanding sales, the company has recently installed new equipment, including six large

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NEW EQUIPMENT—New equipment to increase production and speed feed deliveries has recently been installed at the Redlands (Cal.) Feed & Milling Co. plant shown here. The company's business is about 98% poultry feeds.

overhead bins with a capacity of three carloads each. The company has also added several 13-ton delivery trucks. Each truck is divided into five compartments, so that five customers can be served on one trip.

The company manufactures only feeds and does not own any farms or keep sub-stations for storage. Large quantities of Texas milo, corn, barley and oats are shipped in by rail and truck every day. Protein and other supplements are received in sacks.

When feed is to be mixed, the workers pour the sacked ingredients into a floor spout where they drop into mixers in the basement. Bulk ingredients are run down from overhead storage. After the feed is mixed, it is elevated to outside storage bins. Directly under the bins are spouts through which the feed flows by gravity into the waiting trucks.

The trucks park on a large 60-ft. scale, and each batch of feed put into the five compartments is weighed and recorded.

15% Speed-Up

"These overhead storage bins and trucks have speeded up our deliveries by at least 15%," Mr. DeJong says. "In this area the trend is toward larger flocks, more equipment and larger orders. This also means a similar trend in the feed mill business."

In dealing with some of the nation's largest and most successful poultrymen, the mill furnishing the feed must also give service, company officials feel.

The Redlands Feed & Milling Co. has a staff of five experts, four of whom are college trained in poultry and nutrition. The manager, Jordan Berg, is a poultry nutritionist and is in charge of the outside service department.

Each one of the five men has a certain area for which he is responsi-

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ble. He knows each owner in his area, visits with them personally and is available at any time if needed.

Service Call Necessary

"We must give service to stay in business," says Mr. DeJong.

The service man visits the flock, checks every phase of the operation, asks numerous questions and examines the birds. If the answer is not apparent, a few of the diseased hens are rushed to the state laboratory at San Gabriel, Cal., for dissection and an expert analysis.

Giving such complete service has some drawbacks, however, according to Mr. DeJong. Some owners take advantage of it, and ask to have the service men out to do routine culling and other work that experienced poultry owners ordinarily do.

"Sometimes we have to discourage this," Mr. DeJong says, "but it must be handled tactfully. When needed, we are glad to help."

The company has several feed formulas in making laying mash, growing mash and other chicken feed. Most owners merely ask what kind of feed is best for a particular flock or growing chicks and allow the company to make recommendations. Five or six of the large operators use their own feed formulas, however. The company will work either way with an owner.

Credit Handling

In dealing with any business as flexible as producing eggs, the credit problem is always present. There is no method of handling it 100% successfully, believes Mr. DeJong.

The company makes most of its sales on a 30-day open account. Thus far credit losses have been very small, though it is something that is watched closely.

"Our biggest risk is the small producer who is barely breaking even with his hens," says Mr. DeJong. "He is the man most likely to go out of business when egg prices drop. We saw this happen last spring when egg prices dropped to 29¢ doz., while production costs stayed at about 30 to 32¢ doz. A lot of smaller operators were forced to sell out."

The company has found through experience that these marginal operators should not be encouraged too much, company officials feel. Most of them will eventually be forced to sell their flocks to more successful neighbors.

"Too many of the fellows needing help want to operate on our capital," Mr. DeJong explains, "and it's a dangerous practice. In spite of all we can do, most of them will go broke, anyway, and the feed bill may never be paid. We try to help poultrymen stay in business and make money, but some of them are due to fail, so we must watch these careless operators and not put out too much feed on credit."

The Redlands feed firm has enjoyed a steady expansion in business in recent years. Commenting on some principles of success, Mr. DeJong says: "It takes good feed to produce eggs at a profit. It takes a streamlined operation, employees who know their business and love their work, and a desire to help the poultryman make a profit. When you deviate from those principles, you're headed for bankruptcy in a hurry."

Scientists Honor Dr. Rollin Thayer

STILLWATER, OKLA.—Dr. Rollin H. Thayer, professor of nutrition in Oklahoma State University's poultry science department, has been honored for his contributions in the field of science.

Dr. Thayer has received a certificate and the title of "Fellow" from the American Association for the Advancement of Science, according to Dr. John West, head of the poultry science department. Dr. Thayer's work in poultry nutrition has attracted wide attention.

NAMES NEW MANAGER

GOWRIE, IOWA—Lester Lund is the new manager of the Farmers Cooperative Grain & Lumber Co. here. He succeeds Harvey Craig, who resigned to become a draftsman for the Todd Construction Co., Ames, builder of elevators and feed mills.

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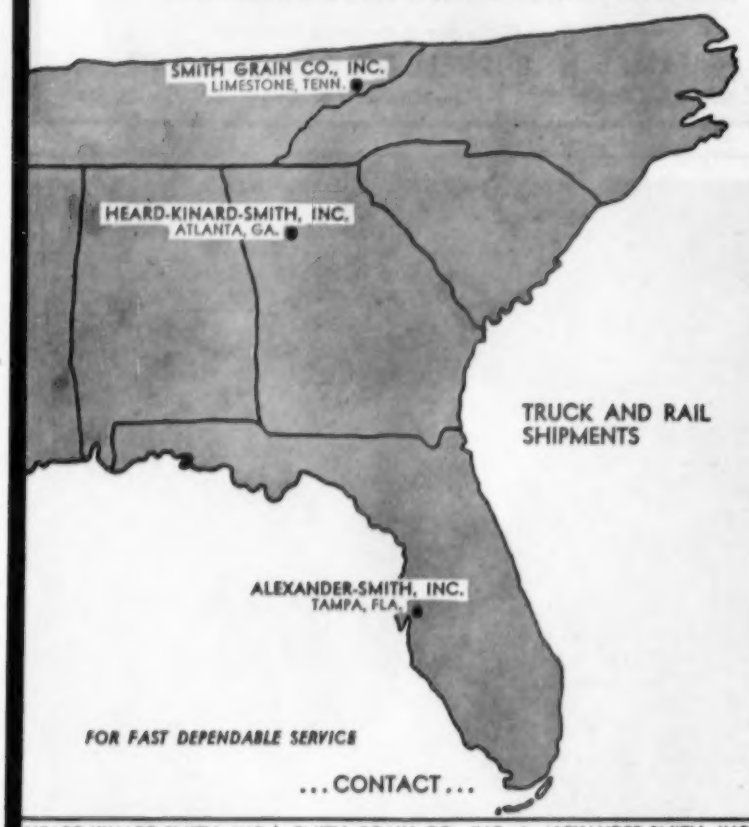

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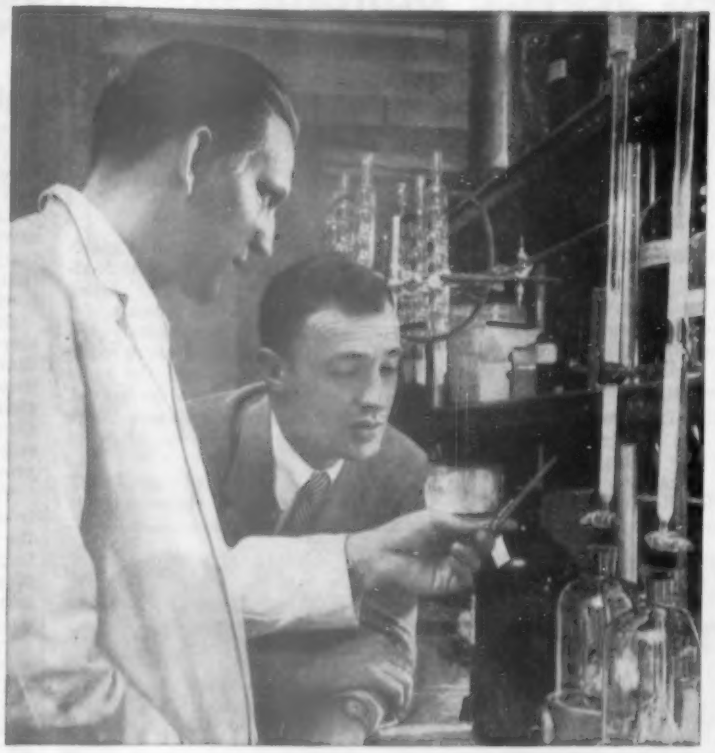

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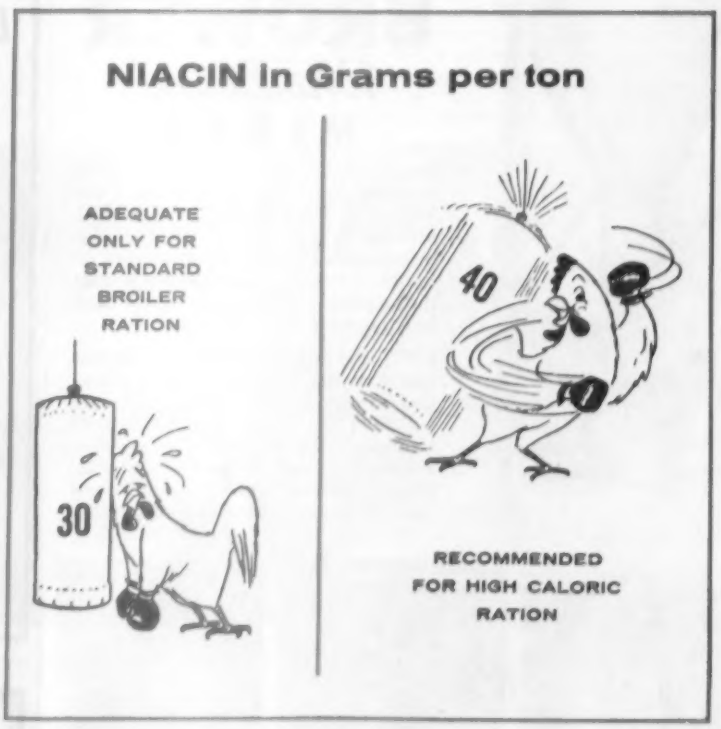

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Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Previous Implants

Farmers buying feeder cattle are advised by a North Dakota Agricultural College nutritionist not to worry about whether the cattle have had stilbestrol implant treatment at some earlier time.

Dr. W. E. Dinusson of North Dakota said the earlier treatment will not affect the ability of the animals to make satisfactory gains in the feedlot. He cites recent research by the Oklahoma Agricultural Experiment Station which shows that feedlot gains were not affected by earlier use of stilbestrol on the animals.

He said 14 steers previously implanted with stilbestrol were compared with 14 head from the same herd that had not been implanted. The results were the same. Both gained slightly more than 2.6 lb. a day.

Although in some instances feeder cattle implanted with stilbestrol may not have the desirable physical appearance the feeder buyer is used to buying, the Oklahoma experiments show that the feed lot performance of these cattle is not affected by previous implanting.

◆

Lights for Broilers

There is no simple answer to the question of whether to use lights in a broiler house, according to a report from the University of Georgia.

The report said that experiments carried out at different experiment stations show varying results, but that some facts have come out of the tests.

Apparently light does not stimulate more rapid growth in the same way that it increases egg production through stimulation of the pituitary gland. The use of lights to lengthen the day does appear to increase rate of growth slightly, but makes no improvement in feed conversion.

The chicks probably benefit most from lights during the first few weeks, the report said. All-night lights help to prevent crowding, but in the event of power failure chicks can get panicky and may crowd into corners. It was also noted that lights during dark, cloudy days help to get optimum feed consumption.

The big advantage occurs during the summer when the chicks will eat less during the day but will make up for it during the cooler night hours. It is also advised that broiler growers dim all-night lights during the summer.

◆

Treatment for Lice

Cattle should be treated soon for lice even though they may not show many lice now, according to the agricultural extension service at South Dakota State College.

The college reports that cattle will be in "rough shape" by spring if treatment is delayed. Delay also means less milk and less efficiency of gain, the report said.

Recommended treatments are rotenone or a synergized pyrethrum spray for milk cows with a second treatment in 15 days. Lindane or toxaphene should be used for beef, and should be applied at least 30 days before the animals are to be slaughtered.

◆

Paper for Silage

Limestone, sawdust or soil coverings for stacks of silage reduced spoilage little in recent U.S. Department of Agriculture tests. But when asphalt paper was put under the various coverings, spoilage was less than in uncovered stacks.

◆

Dry for a Reason

The dry period in a cow's life has four major functions, according to Philip H. Cole, extension dairyman at the University of Nebraska.

The functions are to rest the milk secreting organs, permit nutrients in the feed to develop the fetus, permit the cow to replenish the mineral supply and give the cow a chance to build up a reserve of body flesh.

He said that cows milking as much as 20 lb. a day are not injured if milking is discontinued abruptly. Those giving over 20 lb. daily probably should have some of their feed withheld to bring production down to this level, he said.

If cows are in good condition at the time of drying off, a dry period of 30 to 60 days is usually sufficient.

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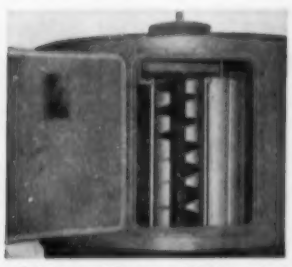

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A longer dry period is desirable if the cow is thin, he said.

Feed during the dry period should be high in protein and minerals.

◆

Feeder Pig Profits

What can a farmer afford to pay for feeder pigs?

The price depends on the value of the finished hogs, cost of raising them, and death loss, according to U.S. Department of Agriculture economists.

To determine finished value, the farmer should estimate price at the time he will sell the hogs, and their probable weight. For example, 35 lb. feeders in late May purchased for October sale, may be estimated at, say, 225, and the price at $16. The expected income at the farm is 2.25 cwt. times $16, or $36.

Probable costs vary, but results show that the average midwest farmer uses 350 lb. of corn and 50 lb. of protein supplement for 100 lb. of weight. For about 665 lb.—12 bu.—of corn at $1.15 a bushel the cost is about $13.80. Supplement cost would be about $5 for a total cost of $18.80.

Labor, shelter, equipment, interest and veterinary costs are usually about a fifth of feed costs, or $3.76. Total production costs are now $22.56.

The difference between income and total cost is the first estimate of the price a farmer can afford to pay. This is $13.44 in this case. This figure, however, should be adjusted for death loss. If the farmer expects a survival rate of 95%, he multiplies this times $13.44 for a price per pig of $12.77. When a pig can be purchased for less than this amount by the farmer, the difference constitutes profit.

◆

Shrink Losses

The rancher who wants to make the most possible profit on feedlot cattle should know his cattle as well as the buyer, according to a University of California livestock specialist.

Reuben Albaugh of the California Extension Service said that when the buyer comes to the ranch he is going to bargain on price, shrinkage and the cutback of off-grade animals.

Mr. Albaugh said scale tests show how much cattle actually do shrink when they are held in ranch corrals overnight awaiting the buyer. He said a feedlot group grading good to choice shrank 6.9% overnight while a group of choice steers of the same lot dropped only 5.1% in the same time. The first group contained wild and nervous animals, he said.

Another group of ten weaner calves showed an overnight shrink of 6.2%, but when fed hay and water, they gained back 2% in an hour. In another group, the animals provided with feed overnight gained back 1.2%.

He pointed out further that the least shrink occurs in grain-fed cattle. Grass-fattened cattle have a higher overnight shrink than the grain-fed, he said.

Red Clover Seed Total 11% Less Than 1956

WASHINGTON—A 1957 red clover seed crop of 66,468,000 lb. of clean seed is forecast for the U.S., according to a report by the Agricultural Marketing Service.

This is 11% less than the 74,759,000 lb. harvested in 1956 and 28% below the 1946-55 average of 92,329,000 lb. Acreage of red clover harvested and to be harvested for seed is estimated at 942,000 acres—down 4% from last year and 43% from the 10-year average. The prospective U.S. yield per acre of 71 lb. is the third highest of record and well above average.

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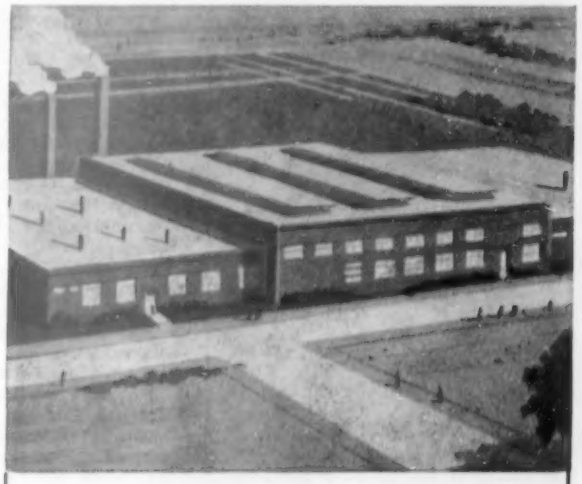

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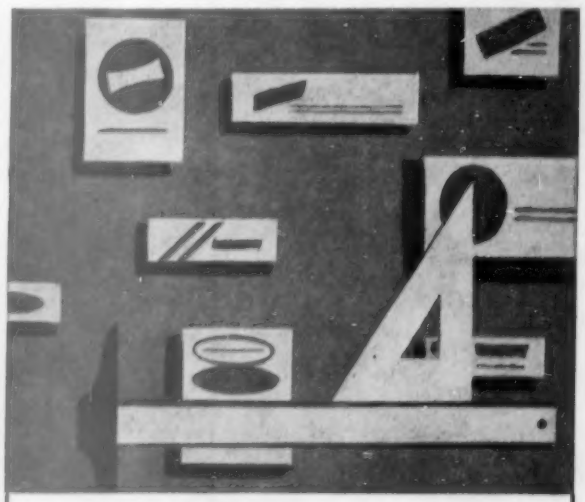

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(Continued from page 23)

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No. 5803—Shear pin drive for corn crusher, Woodbury Sheet Metal Co.

No. 5804—Circular on the status of the use of animal fats in feeds, American Meat Institute Foundation.

No. 5805—Disease control in turkeys and poultry, Hess & Clark, Inc.

No. 5807—Catalog of poultry pharmaceuticals and specialty drugs, Eastern Laboratories, Inc.

No. 5808—Automatic cage fountain for poultry and small animals, Miller Manufacturing Co.

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No. 5810—Therapeutic formula for treatment of respiratory diseases in poultry, Abbott Laboratories.

No. 5811—Symposium booklet on mineral elements, International Minerals & Chemical Corp.

No. 5812 — Blackhead treatment, Merck & Co., Inc.

No. 5813—Three-step program for controlling internal parasites in animal herds, International Salt Co.

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No. 5815—Punched card system for batching operations, Richardson Scale Co.

No. 5816—Calculator for grain and feed company figure work and computing, Victor Adding Machine Co.

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No. 5828—Chlordane squeeze duster, Hess & Clark, Inc.

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No. 5834—Grain roller mill, W-W Grinder Corp.

No. 5839—Bulletin on belt conveyor idlers, C. O. Bartlett & Snow Co.

No. 5846—Phenothiazine in salt, Morton Salt Co.

No. 5842—Bulk material level control device, Bin-Dicator Co.

No. 5843—"Airstream" conveyors for bulk handling, Dracco Corp.

No. 5845—Expeller trouble shooting manual, V. D. Anderson Co.

No. 5847—Livestock and meat industry reference book, American Meat Institute.

OHIO GRAIN CO. FEEDERS DAY—These seven men spoke or took part in the recent feeders day held by the Ohio Grain Co. of Milford Center. About 400 area cattle and hog producers were on hand to hear the speakers and to see the new custom grinding and mixing unit added to the firm's present grain handling facilities at Mechanicsburg. From left to right, F. C. Miller, vice president of Ohio Grain; Dr. Ralph Soule, Chas. Pfizer & Co., Inc., research center, Terre Haute, Ind.; Dr. V. R. Cahill, animal scientist, Ohio State University; Dr. T. W. Perry, animal husbandman, Purdue University; C. K. Shuman, Ohio Grain; John Wiant, Ohio Grain, and Dr. J. A. Hoefer, animal husbandman, Michigan State University.

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Missouri Reports on Feeding Trial Using Stilbestrol for Hogs

COLUMBIA, MO.—Boars and barrows fed a ration supplemented with stilbestrol gained more rapidly and more efficiently than similar check lot animals in a recent University of Missouri feeding trial.

However, both normal and spayed gilts fed the hormone grew more slowly and were less efficient than gilts not fed stilbestrol, says Dr. Leland Tribble, Missouri swine specialist in charge of the work.

Stilbestrol feeding had no effect on carcass cut out, he said. Good carcasses were the rule in all groups.

Boars and normal gilts had less backfat, larger loin muscles and a greater percentage of the carcass in the four lean cuts than barrows or spayed gilts. This seems to indicate that natural sex hormones, both male and female, tend to stimulate growth and retard fattening, Dr. Tribble said.

He noted that the stilbestrol addition—0.25 mg. per pound of feed—depressed the development of sex organs in both sexes.

The trial used 64 Landrace-Poland crossbred pigs, and all were fed a ration made up of corn, soybean oil meal and tankage supplemented with minerals, vitamins and antibiotics. The ration contained 16% crude protein at the start, but was reduced to 12% when the pigs weighed 125 lb. Antibiotics were also removed from the ration at that point.

Dr. Tribble said there were two lots each of spayed gilts, normal gilts, boars and barrows used in the test. One lot of each sex group received the hormone while the other received the check ration.

USDA Designates 1958 Commercial Corn Area

WASHINGTON—The U.S. Department of Agriculture Oct. 7 designated 932 counties in 26 states as the commercial corn-producing area for 1958. The designated area includes two more states (Florida and South Carolina) and 38 additional counties.

The additional 38 counties include nine in Alabama, five in Florida, 14 in Georgia, two in Michigan, one in Missouri, two in South Carolina and five in Virginia.

Kansas Tests 12-Mg. Stilbestrol Implants

MANHATTAN, KANSAS — Implanting one 12-milligram pellet of stilbestrol in heifers on a fattening ration proved beneficial in tests recently completed at Kansas State College, the college reports.

Daily rate of gain was increased .27 lb. over animals in a control lot, and there were no noticeable harmful side effects. Carcass quality was essentially the same in the two groups.

Draytford Richardson, Kansas State College, said higher levels may cause harmful side effects. He suggested that implanting be limited to one pellet of 12 or 15 mg.

PRESIDENT ELECTED

ST. JOSEPH, MO.—Joe Joffe was elected and installed as president of the Vice Presidents Club Firday at Molla Country Club. Mr. Joffe is purchasing agent at Dannen Mills, Inc.

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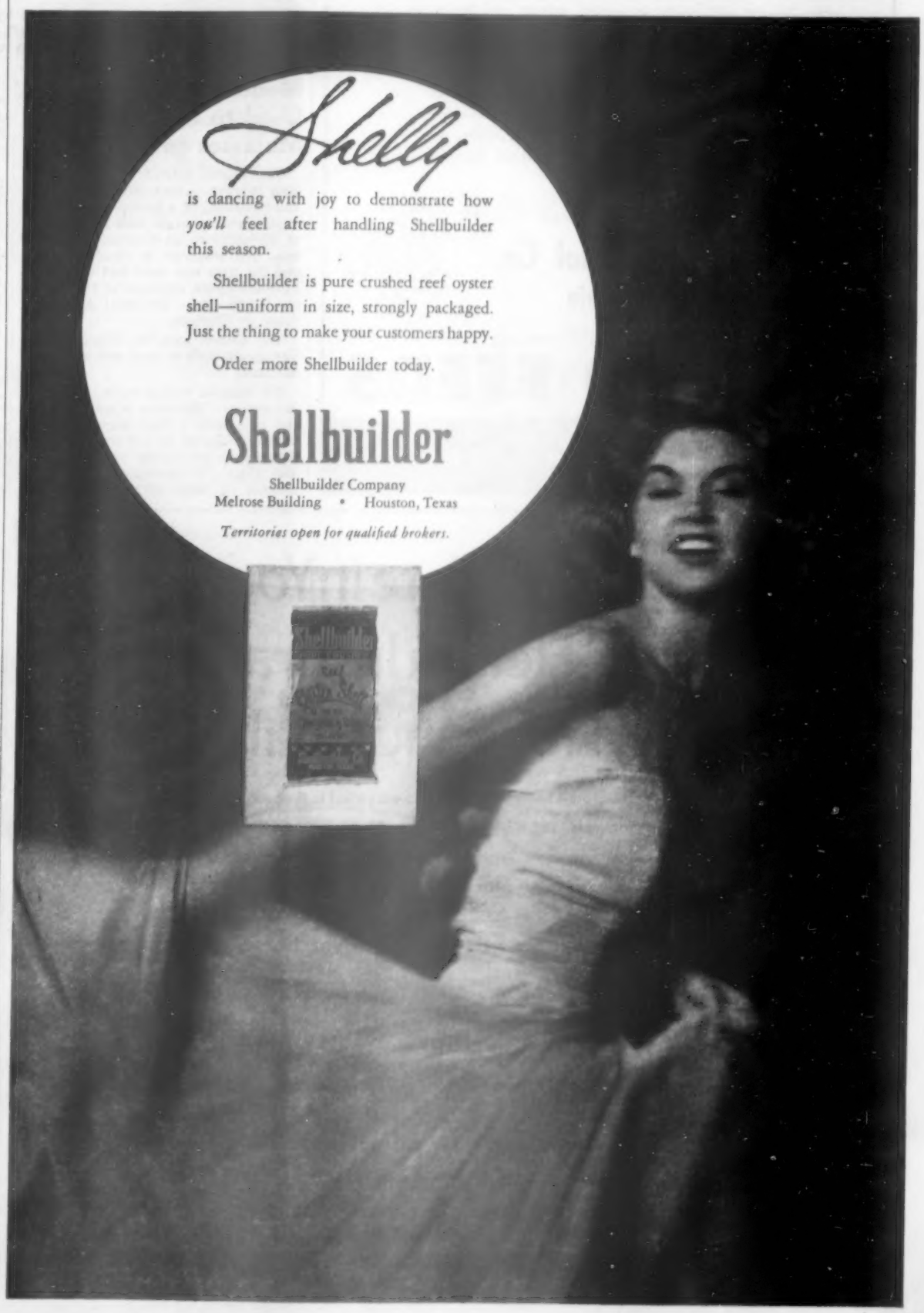

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The molasses spraying device is held by the inventor, Jacob Mandel (left), Choteau, Mont., and Lowell Meyers, GTA elevator manager in Choteau. The grain on the left has been sprayed with molasses using the new unit.

Montana Man's Unit Used to Spray Molasses on Grain

CHOTEAU, MONT. — A Montana man has announced the development and patenting of a device for spraying molasses onto grain and other feeds at elevators or on ranches and feedlots. The inventor is Jacob Mandel, and the unit was used last winter by Lowell Meyers, manager of the Farmers Union Grain Terminal Assn. elevator in Choteau.

The device, said Mr. Mandel, utilizes steam both to heat and spray the molasses.

Mr. Mandel makes these claims for the device: "Molasses is sprayed onto the feed with a high degree of consistency; device is self-cleaning, molasses does not 'candy' on equipment; less than .1% increase in moisture content of feeds sprayed; adaptable to various elevator and feedlot uses, including hay and silage as well as grain; both fixed and portable installations; costs less than $100 to make."

Mr. Meyers said that, based on experience at the Choteau elevator last winter, the GTA is considering installation of the devices in several of its elevators in Montana.

The unit was described as operating like this: It uses steam under pressure to do three jobs. First, the molasses is forced from its storage tank and through its outlet by steam under pressure. Second, an overflow portion of the same steam, still under pressure, is piped through the molasses tank and outlet, heating the molasses to the desired liquid consistency so that it flows easily. Third, the steam is then discharged through a system of small tubes into the molasses at a point just short of the spray nozzle. Both molasses and steam come through the nozzle as a spray or fog; the nozzle is adjustable, like a garden hose nozzle, so that the spray can be either coarse or like a fine fog.

The inventor said the system can be adapted in a number of ways. At

ADVERTISEMENT

Marvin Dunklau

FASTER GAINS — Adding Terramycin to the ration helped Marvin Dunklau, Wayne, Nebraska, cattleman, to increase the daily rate of gain of his beef by .223 lb. Dunklau tested the Terramycin ration on 38 head; compared results with 38 head on a regular feedlot ration. Cattle were fed for 112 days and marketed at about 1,250 lbs. The Terramycin cattle gained an average of 25 lbs. more than control animals. With beef selling for $25 per cwt., that means a premium of $6.25 per head as a result of feeding less than 8½ grams of Terramycin per head. What's more, Dunklau said, "I noticed the Terramycin-fed cattle ate less."

Copper Sulfate in Your Feeds Means Health Insurance for Cattle, Hogs and Poultry

Feed users know that **copper is essential** to the health of their farm animals. Yet a little goes a long and important way. For farm animals, mere "traces"—only about 5 to 10 parts of copper sulfate per million parts of feed—have been found necessary to insure

- **Prevention of anemia**
- **Healthy, efficient breeding performance**
- **Sound, substantial growth**
- **Normal bone formation**
- **Activation of important enzymes**
- **Effective feed utilization**

It is inexpensive to add copper sulfate "traces" to your feedstuffs, but resulting additional sales can be substantial. **Remember**—to the feed buyer who cares, **copper counts.** Discover how copper can count and add up to profits, as well, for you.

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This is a close-up view of the molasses spraying device. It shows the point immediately behind the nozzle where four steam inlet pipes discharge steam into molasses flowing through the larger duct.

the Choteau elevator, Mr. Meyers said, the molasses is sprayed onto steam-rolled grain as it falls vertically from the dryer either into a truck or into a chute for sacking.

State Egg Commission Aided in Florida

TAMPA, FLA.—The new Florida State Egg Commission has been granted a $10,000 loan from the state department of agriculture to help get its operation started. The Commission has agreed to set up a business division to handle its affairs.

The organization, which will collect a tax of 2¢ on each crate of eggs marketed to cover its expenses, has a three-point marketing program: To encourage Florida stores to sell Florida-produced eggs; cooperation with the state inspection service to prevent illegal shipment of eggs from other states, and plans to help poultrymen form egg cooperatives and develop good marketing methods.

Carl Binger of Bushnell has resigned from the commission itself to become manager of its operations, at $6,000 a year. One of the Commission's first acts was to set up a special committee to contact medical men about "counteracting the opinion that egg consumption by middle-aged people causes an arterial condition—heart disease."

New Poultry Record

WASHINGTON — Birds in flocks participating in the National Poultry Improvement Plan reached an all-time high of more than 39 million as of June 30, 1957, the U.S. Department of Agriculture reports. The birds are in about 67,000 NPIP flocks throughout the country.

Flock owners in 47 states are taking part in the national program, sponsored by USDA. Its major objectives are breeding improvement and the control and eradication of poultry diseases, with specific emphasis on pullorum and typhoid.

The previous NPIP participation record was set in 1951-52, when the program included more than 37 million birds in some 96,000 flocks.

BULK EXPANSION—One of the new trucks purchased by Allstate Hatchery, Willmar, Minn., in its recent expansion into a bulk feed program is shown here. Some 6,000 bu. of grain a week are bought by Allstate and in turn processed in the firm's new custom feed mill. An important turkey area, the Willmar area has large and growing bulk feeding operations, Allstate officials said. The truck in the picture above is unloading feed into a laying house.

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A Look at Future Developments in Swine Production

By Dr. R. M. Bethke
Ralston Purina Co.

Swine producers, just like other producers of meat, milk, eggs and fiber, cannot or dare not be satisfied with their present accomplishments because they will lose out to other producers of animal agriculture if they are. This means that swine producers will have to look at their operations realistically and plan for more efficient production in the future.

I have no special facilities for looking into the future or for forecasting what will happen. However, there are certain signals, trends or signposts which indicate that:

● The pork producer will continue to have more and more competition for the housewife's meat dollar. This competition will be especially strong from broiler producers. The gains that have been made in broiler production over the past decade are almost fantastic. Three-pound broilers are now being produced on less than 7 lb. of feed—and don't ever believe that the end has been reached. Commercial broilers will shortly be produced on 2 lb. of feed for each pound of live broiler.

Can the pork producer stay in business facing such facts? I think he can if he really uses the four cardinal principles of good breeding, proper feeding, sound disease control and good management with good business methods in his enterprise.

● Individual hog enterprises will become larger. They will have to become larger in order to make more efficient use of equipment and labor and thus reduce the cost of production.

● Good business methods of keeping records and knowing and not guessing at what costs or profits are will become a necessity. It will be a matter of knowing whether the hogs are "keeping you and your family" and not a matter of your keeping hogs—whether you are getting $1, $1.50 or $2 or more per bushel of corn by marketing it through hogs.

● Hogs are moving into other sections of the country. This does not mean that the center of hog production will shift from the Corn Belt. Instead it means that more pork will be produced in other parts of the country than the Corn Belt. This will affect your potential pork markets.

● More attention will be given to environment as a factor in pork production. Heat and humidity, for example, have a pronounced effect on feed consumption and therefore efficiency. We have found that pigs farrowed in summer and fall make better use of feed than spring-farrowed pigs. The day of air-conditioned hog houses is nothing to laugh about.

● More and more consideration is being given to keeping pigs in confinement on hard surfaces which can be kept clean. Some of the best records that I have seen with respect to gains and feed utilization under practical conditions have come from pigs reared and grown out in small, sheltered concrete yards.

● Many large hog operators are switching over to complete type rations, from the free-choice supplement-grain type ration. Bulk feed handling and the use of drugs and medicaments adapt themselves much better to the complete type feed.

● The age at which pigs will be weaned will become less and less as we learn more and more about the feeding of pigs during the first few weeks of life. Such a program will allow for more than two litters per sow per year and efficient use of equipment and labor during the year.

● More emphasis will be put on breeding—not only with respect to litter size, nursing ability, meat-type, etc., but on the ability of the stock or strains to gain rapidly and convert feed efficiently.

● Management and disease and parasite control will become more and more an integral part of a good operation. Hogs respond to clean, disease- and parasite-free quarters. Drugs or medicaments are no substitute for sanitary quarters and sanitary practices.

USDA figures, based on five-year records of typical hog farms, show that each dead pig represents a loss of:

—140 lb. of feed at farrowing time.
—260 lb. of feed at 10 weeks.
—600 lb. of feed at 6 months.

Good management and care plus good feeding and proper disease control can go a long way in cutting down such losses and make pork production more efficient and profitable.

● Further improvements will be made in feeds so that the efficient operator will be able to produce 1 lb. of pork on 3 lb. or less of feed. Whether these improvements will

***EDITOR'S NOTE:** Dr. R. M. Bethke, vice president of the Ralston Purina Co. and formerly on the Ohio Experiment Station staff, was a speaker at the recent Swine Day at the station. As part of his talk, he offered some predictions on future developments in swine production which will interest feed men as well as producers. The accompanying article is from Dr. Bethke's talk.*

Farm and Feed Salt NEWS

FROM INTERNATIONAL SALT COMPANY, INC

Newly Perfected Sterling Swine Supermix Blusalt

- **COUNTERACTS PARAKERATOSIS**
- **REDUCES MINERAL INVENTORY**

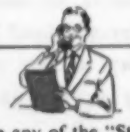
Extensive research in swine nutrition shows that it's necessary to add extra zinc to swine feed mixes in order to counteract Parakeratosis in growing pigs. This is a nutritional disease of zinc deficiency induced or aggravated by swine diets high in calcium and low in zinc.

Today, you can prepare swine feeds which counteract Parakeratosis—*without* having to increase your mineral inventory. Simply use new "Sterling" Swine Supermix Blusalt in place of plain salt. This feed-mixing salt contains the extra zinc needed, and the other vital trace minerals (cobalt, copper, iron, iodine, manganese, and sulfate sulfur).

"Sterling" Swine Supermix Blusalt replaces plain salt on a pound-for-pound basis. What's more, an anti-separation agent has been added to assure uniform trace-mineral content when Swine Supermix Blusalt is properly mixed in feed.

For free tables that show just how much "Sterling" Swine Supermix Blusalt should be added to the different swine feeds . . . and for a guaranteed analysis of this new feed-mixing product . . . simply contact International Salt Co.

Want service with your salt?



You can get it from International's Animal Nutrition Department. Located at Watkins Glen, New York, this department does continuing research into the proper use of salt and trace minerals in modern livestock and poultry feeding programs. It's your department to consult at any time for technical advice on mixing or feed-formula problems, and for information on any of the "Sterling" Salt products. You can also get details on the department's services from any of International's representatives.

SALES OFFICES: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O., Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; Memphis, Tenn.; and Richmond, Va

New Colored Bags for Easy Identification of Sterling Salt Products

Brightly colored bags have just been designed by International for two famous "Sterling" Farm Salt products "Sterling" Blusalt—high-quality salt plus seven trace minerals vital to livestock growth and reproduction—is now packed in *blue* bags. "Sterling" Green'salt—salt plus trace minerals plus 10% phenothiazine for effective low-level worm control—is packed in *green* bags. (And "Sterling" Brine Buttons—compressed tablets of evaporated salt for home water softeners—now come in bright *yellow* bags.)

For quick identification—even when the bags are stacked, each product is distinctly marked at top and bottom by the brand name printed in a *colored band*. Both the 25-lb. Green'salt bag and the 25-lb. Brine Buttons bag have handles stitched in the top for your, and your customers' convenience

For detailed information on these three "Sterling" Salt products . . . or for ideas on how to set up an attractive display with the colorful, new bags . . . get in touch with International Salt Co.'s nearest sales office.

Did you know?

. . . Symptoms of salt deficiency in pigs vary all the way from small to severe reductions in rate and economy of gains. In experiments where some lots of pigs were denied salt, each one dollar's worth of salt saved cost $20 in feed!

. . . In addition to "Sterling" Swine Supermix Blusalt for swine-feed mixing, International produces "Sterling" Supermix Blusalt for livestock feeds, and "Sterling" Gold Bond Blusalt for poultry feeds. Each of these products contains the seven vital trace minerals—in the correct proportions for each type of feed.

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come about by a combination of feed ingredients or through feed "additives" I am unable to say. If I were to guess, I would say it would be through a combination of the two.

Swine production has a good future because American people like good meat and our population is not static—thousands of potential meat eaters are born daily. Likewise, it will be possible to make money in future swine production—providing good business methods and the cardinal principles of good breeding, good feed, sound management and careful sanitation and disease control are applied.

New Employment Help Offered by Government

WASHINGTON—Job openings for men with professional or managerial experience will be matched more quickly with job seekers over the nation through an expanded service of the Bureau of Employment Security of the U.S. Labor Department and the state employment security offices.

James P. Mitchell, secretary of labor, said the state employment services, which operate 1,750 local employment offices, have designated 78 local and state employment services to serve as special employment centers to speed up the matching of men with managerial or professional experience with job openings.

If an employer's job opening for a professional worker cannot be filled by any of the 1,750 local offices in which it is filed, the information regarding that opening may be quickly dispatched to the special employment offices. Each of these offices will have on file at all times a nationwide list of jobs in professional and managerial occupations. At these locations applications can be matched against openings.

Bulk Handling Firm Appoints Dealer

BEATRICE, NEB. — Tote System, Inc. of Beatrice, manufacturer of bulk material handling equipment, announces the appointment of Thornel Associates, 4754 West Washington Blvd., Chicago, as representative for its complete line of Tote bins, tilts, tanks and accessory equipment in that area.

Tote System presently has 35 manufacturers' representatives located in 23 states and the territories of Hawaii and Puerto Rico.

Texas Feed Booklet

COLLEGE STATION, TEXAS—A booklet on "Emergency Feeding of Livestock" has been issued by the Texas A&M College agricultural office and is available from county agents. The booklet, No. B-218, features a chart giving the percentage chemical composition of various feeding materials.

Modern Bulk Dairying Wins Favor in Oregon

PORTLAND, ORE.—Modern bulk tank dairy installations have replaced the old 10-gal. milk can on some 453 Oregon dairy farms, according to Kenneth E. Carl, who is in charge of dairy sanitation law enforcement for the Oregon State Department of Agriculture.

He said this means that almost 50% of the 913 producers and producer-distributors under state milk inspection now run their milk into bulk tanks. Willamette Valley dairies have about half of the bulk tank installations, he reported.

Pipeline milkers are also becoming more commonplace, he said. They are now in use on 270 Oregon dairy farms. About two-thirds of the pipeline operations are hooked directly to the bulk tanks.

Milking parlors are relatively commonplace. Almost 65% of the Oregon dairies have them. Willamette Valley leads with 276. Over the state the stanchion-type milking parlor leads almost 2-1.

Lounging sheds are also becoming more popular, and sawdust shavings are losing out to straw as favorite bedding material. The report shows that 429 dairymen feed and house their animals in lounging sheds while 262 use the stanchion-type barns. More than a fourth of the dairies have paving or other hard surfacing in the barnyard.

The report shows that 393 dairymen are located in the Willamette Valley, 194 are in eastern Oregon, 187 in the southern part of the state and 139 on the Coast.

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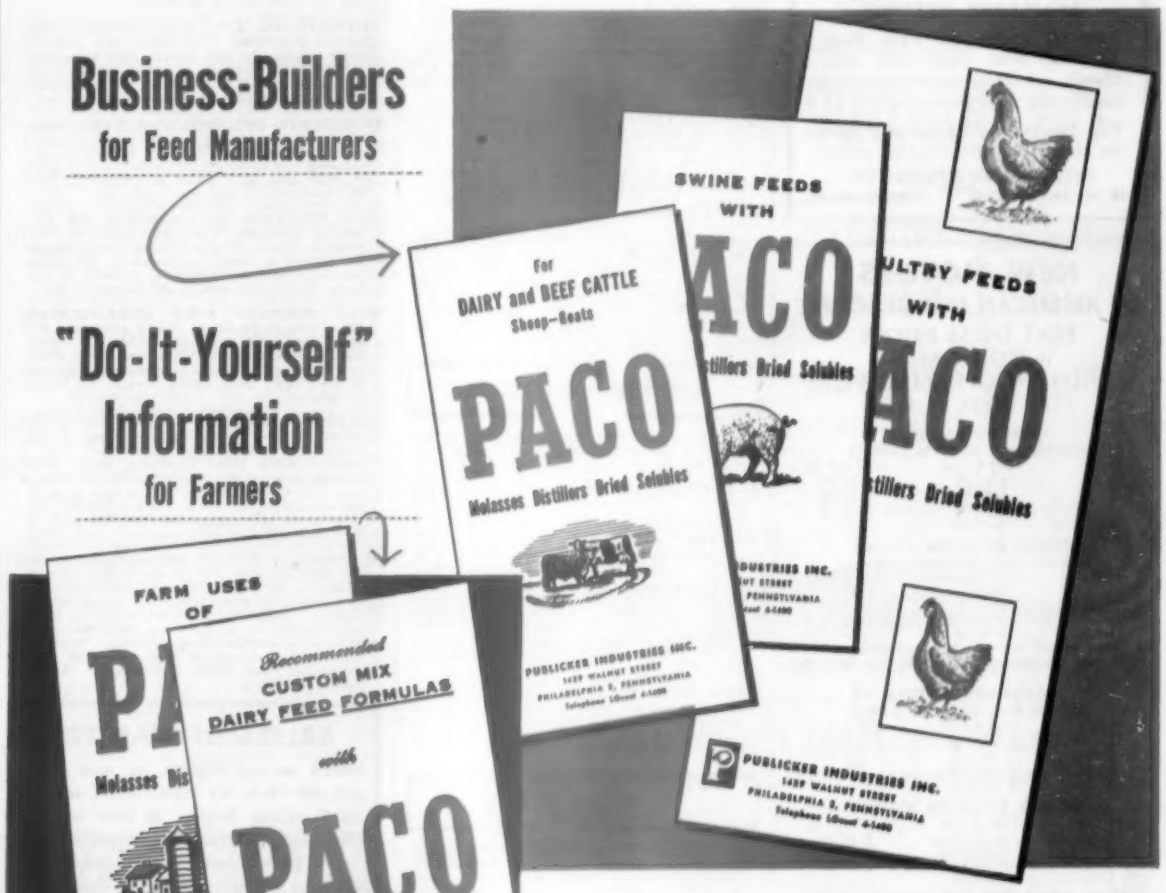
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REBUILT UNION SPECIAL SEWING MAchines, styles 14500, 80600-E & H. New suspended bag closing units and new portable power conveyors. Two Met. Suspended units, $125 each. One Singer suspended unit, $125. E. C. Covell, 405 Dunbarton Road, Baltimore, Md. Phone: CL 4-9227.

ONE PRATER BLUE STREAK HAMMERmill, Serial No. 14718, Type 3 A.C., with 40 H.P. Westinghouse motor. One Sprout-Waldron Feeder and Molasses Mixer, small size. One Strong-Scott Feeder and Molasses Mixer, No. 1. One Draver Feeder, Size 3, Style J. Lake Milling Co., Ronan, Mont.

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EXCELLENT SIDELINE ITEM FOR salesmen selling to feed, grain, farm equipment dealers and farmers. Liberal commissions. Replies will be held confidential. Write Doane Agricultural Service, Inc., St. Louis 8, Mo.

ADVERTISING AND SALES PROMOTION manager wanted. Creating a new position with a good future. Salary and bonus arrangement. Replies strictly confidential. Pay Way Feed Mills, Inc., 3rd & Broadway, Kansas City 6, Mo.

IMMEDIATE OPENING FOR FEED SPEcialty salesman for partially established territory, southern Indiana. Straight commission basis, with guaranteed draw. Must furnish own car. Ryde & Company, 5425 W. Roosevelt Road, Chicago, Ill.

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FINE POSITION FOR EXPERIENCED man, age 35 to 45, as credit manager and assistant sales manager with old established feed manufacturing company. Challenging future. Contact James H. Burrell & Co., Inc., 3615 Olive Street, St. Louis 8, Mo.

SALESMAN WANTED — GROWING FEED manufacturer with well known brand needs an experienced salesman for a southwestern Ohio territory. Some good accounts already established. Favorable rail and truck service makes this a natural development area. Send complete details, age, experience and education. P. O. Box 932, Hilltop Station, Columbus, Ohio.

WANTED — PLANT SUPERINTENDENT for medium size feed plant in Middlewest. Must have experience as superintendent or assistant superintendent in large or medium feed manufacturing plant. Good opportunity in a growing business. Send complete details of experience, training, education, references and snapshot. Address Ad No. 3171, Feedstuffs, Minneapolis 1, Minn.

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1—No. 1 Forster Steel Case Duster—very good	450.00
1—3-B. Sprout-Waldron Receiving Separator—very good	650.00
2—Model 22 Carter Disc Cockle Machines—each	200.00
1—Direct Heat Drier, 4'x40'—complete	3,500.00
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Vineland Laboratories Announces Brochure

VINELAND, N.J.—Vineland Poultry Laboratories has completed recently a new brochure describing how poultry science and pathologists played a role in the manufacturing processes used in making vaccine to prevent Asian influenza and other human and animal diseases.

The detailed account tells how in 1945 the U.S. Department of Agriculture's serum virus control section made it mandatory for all livestock biological laboratories to use the embryonated egg for vaccine manufacturing. The brochure points up the role the poultry industry has played in the continuing war against perplexing medical and animal problems.

A copy of the brochure is available by writing to Vineland Poultry Laboratories, Vineland, N.J.

California Gets Grants For Poultry Research

BERKELEY, CAL.—The University of California received some $8,000 in two cash donations during August to support research studies in the field of poultry nutrition.

Smith, Kline & French Laboratories gave $5,000 for research on use of thorazine and other agents, a project underway on the Davis campus.

An additional $3,000 gift was made during the same month by the National Cottonseed Products Assn. for research on gossypol in hens' diet and chemical and physical characteristics of fresh and stored eggs. This project is also in progress on the Davis campus.

Texas Convention

FT. WORTH—The Texas Seedsmens Assn. will have its annual convention Nov. 3-5 at the Texas Hotel in Ft. Worth, announces Mensing West, Terminal Grain Co., president.

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Ohio Reports Success With Lamb Implants

WOOSTER, OHIO — A hormone implant which combines estradiol and progesterone, two natural female hormones, has been successful in increasing rate of gain and feed efficiency with very few side effects in recent feeding trials at the Ohio Experiment Station at Wooster.

Although the amounts of hormones used in the implants was not reported, the researchers said the experiments have been using lower dosage levels than in the past.

Progesterone has been found to check the effects of estradiol, the hormone which produces female characteristics, without retarding the growth gains, when the two are combined at low levels.

In three lamb fattening trials recently using a total of 70 lambs, the estradiol-progesterone implant increased the rate of gain by 34% while feed per 100 lb. of gain was reduced by 23%.

The lambs averaged about 70 lb. at the beginning of the experiments and were fed about 80 days on a high grain ration. There was some swelling of the vulva and some mammary development as a result of the hormone treatment, but the effects were not considered severe enough to be considered objectionable.

Live grades and carcass grades were not significantly different from control groups, and in one set the hormone treated lambs had less fat trim than the control animals.

Another trial used implants placed in lambs six weeks prior to weaning, and the lambs were carried as suckling lambs on pasture and as full-fed lambs after weaning and up to slaughter weights. Over the entire period, the lambs gained 16% faster than the controls. But the report on the tests stated that the results should be repeated to further substantiate the increased growth.

Ronald R. Johnson, O. G. Bentley and D. S. Bell reported on this work in a recent issue of Ohio Farm and Home Research, a publication of the Ohio State University College of Agriculture.

FARMER BUYS MILL

HARRISBURG, ORE.—Tom Cowgill, local farmer, has purchased the former Blue Ribbon mill here and will operate it under the name of Harrisburg Feed & Seed.

FRENCH FEED MEN—Gage Kent (left), president, Kent Feeds, Inc., Muscatine, Iowa, was host recently to representatives of the Duquesne Feed Co., Montfort, France, and a French feed ingredient supplier, who toured the firm's production, laboratory and farm research facilities. Interest in U.S. feed manufacturing processes prompted the visit, and references to Kent plant facilities in Feedstuffs brought the Frenchmen to Muscatine, Kent officials said. Production procedures which effect efficiencies and economies were of special interest to the visitors. Left to right are Mr. Gage, Mr. Radisson, nutritionist for Duquesne; Mr. Duquesne, president of Duquesne; and H. G. Verne, executive of the Centrale Rousselot Co. of France, supplier of vitamins and feed ingredients.

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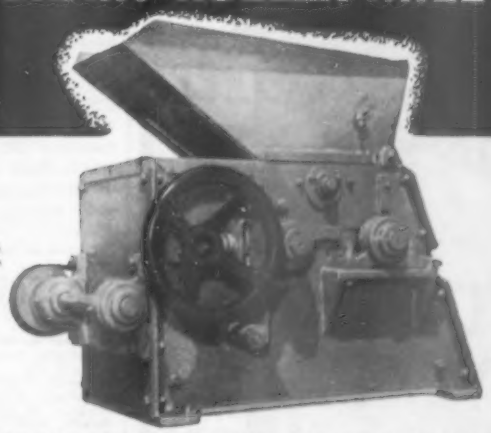

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PRODUCTION SCHOOL SPEAKERS—The U.S. Department of Agriculture has cooperated in or sponsored some of the feed mill research to be reported at the 1957 Midwest Feed Production School, and two experts from USDA's Agricultural Marketing Service will be on the school program. The research includes a materials handling study and a study of custom feed mills. One of the men on the program is Dr. V. John Brensike, an agricultural economist who has conducted a number of studies in the feed industry. He handles research on the marketing of grains and feeds and assists the head of the grains and feeds section of the market organization and costs branch of the AMS. Also on the school program will be Dr. D. Barton DeLoach, an agricultural economist who is chief of the market organization and costs branch. Another speaker is Dr. Gerald Nadler, a registered professional engineer who has been active in industry and educational work in industrial engineering, including time and motion study. He is head of the department of industrial engineering at Washington University, St. Louis. The production school, sponsored by the Midwest Feed Manufacturers Assn., will be held Nov. 20-22 in Kansas City.

State Beef Commission Considered for Oregon

PORTLAND, ORE.—Western Oregon beef and dairy cattle producers were given an opportunity to express their opinions concerning formation of an Oregon beef commission at the state office building here recently when the first of 17 statewide hearings was held.

In announcing the hearings, Robert J. Steward, state director of agriculture, emphasized that the commission proposal concerns all persons producing beef for market, including those selling dairy animals for meat.

The Portland hearing, along with the 16 others, is designed to help state department of agriculture officials determine whether there is need for an Oregon beef industry self-help program.

Producers could be assessed up to 10¢ an animal on all sales for slaughter or for shipment out of state if the commission is created. These funds would be restricted to use on beef marketing problems.

CARGILL
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UNIQUE FEED MARKET—Robert Benefield, Tuscaloosa, Ala., uses more than 300 lb. of laying mash daily to feed the "critters" on his farm. In this case the "critters" are crickets and worms used as live bait for fishing. In the first picture he digs into a worm bed, and the second picture shows one of the bins used for raising crickets. Each bin of the type shown here requires more than a pound of laying mash daily. Mr. Benefield has 250 cricket bins. The worms are also fed on laying mash.

Cricket Farm Provides Unique Market for Chicken Laying Mash

TUSCALOOSA, ALA. — Crickets are eating up 300 lb. of laying mash daily at the Robert Benefield farm here, but Mr. Benefield wouldn't have it any other way.

The reason is, simply, that the Benefield farm specializes in breeding and raising crickets as bait for fishing, and Mr. Benefield knows that when mash consumption is high, his crickets are in good shape and growing fast.

Established four years ago, the farm is now a growing and prospering business supplying crickets and other live bait for fishing to dealers in Alabama, Mississippi, Arkansas, Louisiana and Tennessee. Approximately 90% of the farm's production is sold outside the local area. The crickets are sent by mail in special containers.

If 300 lb. of laying mash were fed to chickens, it would supply the daily requirements of a flock of about 1,200 laying hens.

At the Benefield farm, however, it takes care of literally millions of crickets.

The crickets are bred, raised and kept in specially built galvanized metal bins with hinged screen tops that fit tightly, but can be opened easily. In each bin is a watering jar, a feeding screen and one or more feeding trays kept full of laying mash at all times.

There is even litter for the crickets —shredded newspaper for the insects to hide in.

The farm has 250 bins, and a little more than a pound of mash is consumed daily in each. Mr. Benefield said he can't estimate the number of crickets on hand, but he guessed that the number would run into millions.

Worms are also good laying mash consumers on the Benefield farm. Although the farm's worm population currently is somewhat thin because of a recent disease problem, when the farm is back in production, the worms will consume several hundred pounds of laying mash weekly.

The Benefield farm, which gets its feed supply from Spiller Feed & Seed Co., Tuscaloosa, isn't alone as a unique market for feed. Another bait farm in the area buys 300 to 400 lb. of laying mash each week for its worms from the Feeders Supply Co., Tuscaloosa.

Mr. Benefield said the cricket farm has some of the problems of every farmer. And the big one is no stranger. It's the weather. When the weather is good, people are fishing, and buying crickets.

Arkansas Reports on Feed Tonnage Sales

LITTLE ROCK, ARK.—Total feed sales reported to the Arkansas State Plant Board for the year July 1, 1956, through June 30, 1957, amount to 1,017,543 tons, compared with 917,534 tons for 1955-56. Arkansas tonnage went up to 458,549 tons, compared with 399,087 tons for 1955-56, and out-of-state tonnage went up from 518,447 to 558,447.

Broiler starter and grower feeds, totaling 382,590 tons accounted for the bulk of the total sales.

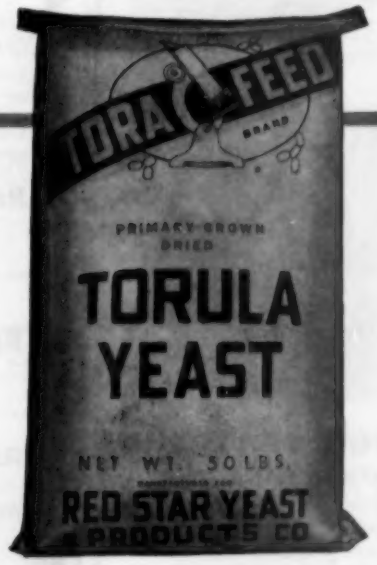
The quantities of feeds sold in the year ending June 30, 1957, are as follows:

Classes of feeds	Tons
Dairy or cow feeds	120,486
Cattle and calf feeds	11,287
Turkey feeds	40,517
Broiler, starter and grower	382,590
Scratch feeds	6,795
All other poultry feeds	174,353
Horse and mule and all grain	33,686
Pig and hog	19,616
Dog and other small animal feeds	9,284
Cottonseed meal	74,514
Soybean oil meal	10,856
Alfalfa meal	2,264
Corn products	32,516
Wheat products	48,537
Oat products	7,332
Rice bran	3,404
Rice mill by-products	8,928
Other rice products	2,870
Other grains	2,468
Animal products	2,394
Brewers and distillers products	581
Milk products	1,120
Mineral feeds	2,163
Miscellaneous	18,982
Total	1,017,543
Tonnage reported, 1955-56	917,534

FEED FIRM OPENS

WELLMAN, IOWA — Trieschmann's Hatchery & Feed Store opened for business here recently.

For prices, packing and other information about TORAFEED, write:



RED STAR YEAST & PRODUCTS COMPANY
Feed Division Milwaukee 1, Wisconsin

BENSON

(Continued from page 1)

posal. First would be establishment of a bi-partisan or non-partisan commission to study the farm problem. Second, the commission would report to Congress on a new program—with emphasis on a Brannan or compensatory direct payment plan to farmers for the difference in the market price and a modified level of parity price for the crop. This level might be 60 or 70% of parity for the crop for such a total quantity as might be determined to meet the needs for export and domestic requirements and a reasonable carryover. Farmers would be permitted to grow any quantity they desired in excess of this determined total requirement but for that quantity they would obtain no compensatory payment.

While there would be no acreage allotments for any crop, the total requirement of a grain crop would be measured in terms of bushels of anticipated demand.

In the case of corn, calculations would be made as to the national and export bushelage plus carryover demand. That demand would be allocated to individual farms on some base—either historical or by areas as to eligibility for direct or compensatory payments in terms of bushels. Any production in excess of such a bushelage allotment would not be eligible for direct payments.

A similar theory would apply to cattle, swine and poultry and other commodities.

Under this projected proposal to Congress it is expected that the Republicans will take the initiative to head off the Democratic majority. The first step would be to put the proposal under the guidance of a Republican farm leader whom the Democrats in Congress would find it difficult to oppose. At the same time an effort would be made to restore the solidarity of the old Farm Bloc through the use of a bi-partisan commission.

From that commission it would be hoped or expected that the compensatory payment would be proposed as the only escape from the deepening farm surplus crisis.

Any new proposal on a compensatory payment plan is likely to include a much broader list of farm commodities. Indications of the extent of such a broad plan for commodities may be found in a recent analysis of the Brannan plan by U.S. Department of Agriculture at the request of Congress. (See story on this page.)

In that analysis USDA listed the commodities, which comprise about 85% of all farm cash marketings, as necessary if any successful venture in a compensatory program is to be achieved. Those commodities are wheat, rice, corn, oats, barley, grain sorghums, cattle, calves, hogs, sheep, lambs, milk, butterfat, eggs, farm chickens, broilers, turkeys, peanuts, beans, cottonseed, cotton, wool, burley and flue-cured tobacco, potatoes and oranges.

That this proposal is probable is learned from very reliable farm leader sources here with contacts with both the big political parties. Spokesmen say that at the lowered levels of parity for compensatory payment purposes Congressional reaction will be less unfavorable than it was when Mr. Brannan took his 90% of support plan of this same nature to Congress in 1949. At that time Mr. Brannan saw his plan as only operative for the perishable crops with emphasis on cattle, swine and dairy products. The new plan, however, would cover the broader concept of major farm commodities as noted above.

The USDA report on the operation of a compensatory payment plan for those commodities put a price tag on annual costs of operation, based at 90% of parity, at between 7.5 and 10 billion dollars. Individuals here, who see a modified plan as a probable new program of the administration, say that at the lower levels of price support for those commodities the cost would be drastically reduced. Therefore the plan would have a good chance of Congressional acceptance even though such funds would only be available through annual Congressional appropriations, a condition which was not favorably received in Congressional circles.

However, exponents of the compensatory payment plan say that an annual limit of disbursements for these purposes of about three billion dollars would possibly reflect a lower net cost of farm programs than the amount of money being poured into present programs.

Staff officials at USDA are highly critical of the compensatory payment at any level of price support. They fail to see how such a system can remove the present accumulation of surpluses. They applaud, however, a proposal to establish a bi-partisan commission to seek a solution of the farm problem outside the influence of political considerations.

SOYBEANS

(Continued from page 8)

15-million-bushel crop 25 years ago.

There is a considerable difference in opinion as to soybean requirements for the next 12 months, he noted, but no matter how needs are figured, there are ample soybeans to meet all needs for the next year.

"Certainly there's no steam in soybean oil or meal to justify higher prices for soybeans than are currently being paid," the meal sales director stated. "Likewise, the grower sees no incentive to rush in and sell his soybeans at present levels—he can do as well selling them to the government. Hence the deadlock of recent weeks."

Demand for soybean oil meal continues good, he said, but only on a hand-to-mouth basis. Inventories are low but buyers continue to defer making forward commitments, awaiting lower prices. A comparison of buyers' ideas with current quotations indicates that most buyers would buy ahead at $1 to $1.50 below the present price.

Potentially, he added, there's a lot of buying power in the market, and usually when it comes, the market moves rapidly upward to a new base. Whether the market will decline from its present level is hard to predict, but current price levels can hardly be called unattractive. Recent quotes on 44% meal, all bulk Decatur basis, as noted by Mr. Hafner: Unrestricted, $46; Michigan - Indiana - Ohio, $45; Eastern Trunk Lines, $44; Southeast, $44.50; Kansas City Gateway, $43; Iowa and West, $41, and Minnesota and West, $39.50.

Costs of Direct-Payment Support Plan Estimated

WASHINGTON—A system of supporting farmers' prices and incomes by means of direct payments has been under consideration in the U.S. Department of Agriculture and a report has been prepared for Congress estimating the cost of the system. The plan—it can be called a production payment plan, a compensatory payment plan or even a Brannan plan—would cost $7¼ billion a year for 90% support limited to 1952-56 production and over $10.5 billion for unlimited support.

In interpreting these figures USDA points out that they are estimates of gross cost to the government. Net costs would, of course, be lower as most of the current programs for price support and surplus disposal would be abandoned. In 1956, for example, the realized cost of programs primarily for the stabilization of farm prices and incomes totaled nearly $2 billion. On the other hand, no estimates of administrative costs of a payment program have been included.

The large size of the payments for the programs is due to a number of factors including the high support level assumed and the extension of the support program very substantially beyond its present coverage, notably into the livestock sector. The cost is further increased by the large expansion in output that would occur, particularly in the case of the program of unlimited payments.

The principal feature of a direct payment program is that prices of farm products would not be supported in the market but would find their free market level, and any difference between actual prices and the specified price objective would be made up by a direct cash disbursement from the government to the farmer. Because they would compensate for the gap between actual and support prices, direct payments are sometimes called compensatory payments.

Under the program of unlimited payments, an expansion of livestock production would generate a demand for feed grains strong enough to lift feed grain prices close to or above supports, USDA considers. This would stimulate some expansion in corn acreage and output, but the greatest impact would be on wheat, where acreage has been sharply reduced by allotments and quotas.

With feeding demand for it generated by livestock support at 90% of parity and without export subsidy, wheat would be priced out of the export market and would become a major component of the total feed supply. With the great expansion in wheat acreage, and also a considerable expansion in cotton, contraction in acreage of oats, barley and sorghums would be expected, though total output of these grains might show a slight increase due to rising yields.

Alternatives, Underlying Assumptions

Estimates were made on the basis of farm price supports at 90% of parity. Two alternative programs were examined: (1) Direct payments of the difference between 90% of parity and estimated annual market prices, for all marketings; (2) payments limited to a previous volume of marketings, which is calculated as the quantity that moved into domestic disappearance and exports during the five years 1952-56.

In order for the USDA commodity analysts to make estimates of costs under these two programs, it was necessary to make certain general assumptions. The principal ones used were as follows:

- The plan was assumed to apply to all major farm commodities. Under this approach the program costs for any particular commodity differ greatly from those where a direct payments plan is applied only to that commodity or to a small number of commodities.
- Any present excess carryovers would either be withheld from the market, or gradually disposed of in ways that would not affect the domestic level of prices.
- Marketing agreements and orders would remain in force.
- The study was focused ahead to around 1962. This assumption permits the direct payments program to have its effect on production and prices after farmers have had several years in which to make adjustments to it.
- High employment, a stable price level, and a growing population were assumed. Specific economic assumptions included: population up about 8% over 1957; per capita disposable income up about 10%; retail and wholesale prices at about the 1957 level.
- Support prices for individual commodities were assumed to be 90% of modernized parity as based on the price report for August, 1957.
- The commodities included in the analysis were: wheat, rice, corn, oats, barley, grain sorghums, cattle, calves, hogs, sheep, lambs, milk, butterfat, eggs, farm chickens, broilers, turkeys, peanuts, soybeans, cottonseed, cotton, wool, burley tobacco, flue-cured tobacco, potatoes and oranges. These commodities ordinarily account for around 85% of total cash receipts from farm marketings.

Under these specified conditions, total acreage and output are certain to show marked increases, and certain specific commodity problems will appear, such as the necessity of exporting large volumes of cotton and tobacco and the shift of wheat from an export crop to a feed grain.

Implications of payments programs based on other assumptions could be quite different. For example, costs would be very greatly increased if the support level were raised to 100% of parity. On the other hand, costs could be substantially reduced if the support level were lowered, say to 75% of parity; if greater restrictions were placed on payments; or if the payments were confined to a smaller group of commodities. Under these different assumptions, the allocation of costs by commodity would also show a wide degree of variation.

Feedstuffs: Weighted Average Prices and Index Numbers, With Comparisons

Compiled by U.S. Department of Agriculture—Base Period 1947-49=100
(All prices of feeds and grains in dollars per ton)

	5-Year average 1951-55	Oct. 1, 1957	Oct. 8, 1957	Change from previous week	Per cent Oct. 8 is of 5-year average
OILSEED MEALS—					
Weighted average price at principal markets	81.35	63.55	62.30	—1.25	77
Index of weighted prices	99.9	78.1	76.5	—1.6	..
ANIMAL PROTEIN FEEDS—					
Weighted average price at principal markets	106.05	93.55	92.75	— .80	87
Index of weighted prices	88.1	77.7	77.0	—0.7	..
GRAIN HIGH-PROTEIN FEEDS—					
Weighted average price at principal markets	63.50	51.00	50.55	— .45	80
Index of weighted prices	89.3	71.7	71.1	—0.6	..
WHEAT MILLFEEDS—					
Weighted average price at principal markets	54.90	40.35	37.75	—2.60	69
Index of weighted prices	90.4	66.5	62.2	—4.3	..
OTHER MILLFEEDS—					
Weighted average price at principal markets	56.80	41.25	40.65	— .60	72
Index of weighted prices	84.5	61.4	60.5	—0.9	..
ALFALFA MEAL—					
Prices at principal markets	59.75	52.45	52.80	+ .35	88
Index of weighted prices	105.8	92.8	93.5	+0.7	..
MOLASSES, FEEDING—					
Prices at principal markets	27.85	32.56	31.92	— .64	115
Index of weighted prices	82.9	96.9	95.0	—1.9	..
ALL FEEDSTUFFS—					
Weighted average price	68.70	55.35	54.10	—1.25	79
Index of weighted prices	94.0	75.8	74.1	—1.7	..
FEED GRAINS—					
Weighted average price at principal markets	54.20	40.90	41.20	+ .30	76
Index of weighted prices	87.7	65.5	66.1	+0.6	..

William E. Wilson Dies

LOS ANGELES—William E. Wilson, manager of the Wilkinson Grain Co., Los Angeles, died Oct. 13. He was a director of the Los Angeles Grain Exchange, and prior to becoming associated with the Wilkinson Grain Co. had worked in Los Angeles for Balfour, Guthrie & Co., Ltd.

THE FEED MARKETS

★ ★ ★ ★

Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13¼@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19¼¢, 3,000 A 20@21½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢.

Boston: Demand fair; supply adequate; 600 D, 1,500 A 16¢ lb.; 300 D, 2,250 A 17¢ lb.; 300 D, 1,500 A 15¢ lb.; 300 D, 750 A 14¢ lb.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 9@10¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago; drums included.

Seattle: Demand slow; trend steady; supply good; 300 D, 2,250 A 22¢ lb.; 300 D, 1,500 A 19¢ lb.; 300 D, 750 A 17¢ lb.; all ex-warehouse, drums included.

ALFALFA MEAL

Philadelphia: Demand slow; supply light; 17% dehydrated $69.50.

Buffalo: Demand poor; trend steady; supply fair; $65, sacked, Boston.

Cincinnati: Demand poor; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $59; 13% fine suncured $48@50.

New Orleans: Demand fair; trend steady; supply adequate; 17% dehydrated, vitamin A guaranteed $58@59, pellets $55@56.

Seattle: Demand slow; trend steady; supply good; 15% protein suncured $43, delivered, carlots; 136,000 A unit dehydrated $67, delivered, carlots.

Portland: Demand good; supply ample; trend unchanged; suncured $39, dehydrated $52.

Memphis: Demand poor; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $54.

Omaha: Demand fair; supply ample; season about to close; 17% dehydrated, 100,000 A, papers or burlap $52, bulk $48; 20% dehydrated, 150,000 A, papers or burlap $54.

Los Angeles: Demand fair; trend unchanged; supply ample; dehydrated alfalfa meal, 17% protein, 100,000 A $50@51; suncured, 15% protein $45.

St. Louis: Demand slow; trend steady; supply ample; suncured 13% fine $41; 17% dehydrated, 100,000 units vitamin A $53.

Boston: Demand fair; supply ample; dehydrated 17% $65; suncured 13% $46, nominal.

Chicago: Demand and supply fair; 17% dehydrated, with 100,000 units vitamin A guaranteed $54.50@55; 17% with no A guaranteed $49@50; 13% suncured $47.

Minneapolis: Prices remained mainly unchanged; demand slow; 17% dehydrated, 100,000 units of vitamin A guaranteed $54@57; pellets bulk $51@54; granules and oil treated $55@56.

Ft. Worth: Demand fair; supply adequate; Kansas dehydrated, 17%, 100,000 A $58.75@61.75 by rail, $54 by truck; suncured No. 1 13% protein, ¼-in. grind, truck $40 October; Nebraska origin, truck $41, rail $42.80, October through December.

Kansas City: Demand fair, volume of shipment on contracts but new buying interest light; supplies growing scarcer as producing season reaches end; open market offerings from independents rather light and prices about steady with 17% protein meal with 100,000 units of vitamin A guaranteed on arrival quoted at $52 by blenders and $48@49 by independents, sacked, Kansas City; 18% protein, 125,000 A meal $57, sacked; 17% 100,000 A pellets $45@48, bulk; suncured in slow demand, except for some rabbit feed interest on fine ground; No. 1 fine ground $39, No. 1 ¼-in. $35, No. 2 ¼-in. $32, sacked.

ANIMAL FATS (STABILIZED)

St. Paul: Price trend softer, interest by export sources improved; trading steady; 8¼¢ lb. bleachable fancy, f.o.b. producers' plants.

Kansas City: Demand good; trend firm; supply moderate; bleachable fancy tallow 8¼@8¾¢ lb.

Ft. Worth: Demand good; supply scarce; prime tallow, tank cars 8¾¢ lb.; drums 10¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

Chicago: Demand good; supply short; bleachable fancy tallow, tank truck or carlots 8¾¢ lb.; yellow grease 7¾¢ lb.

Louisville: Demand good; trend steady; supply normal; bleachable white 8½¢ lb.; white tallow 8¼¢ lb.; yellow grease 7½¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 8½¢ lb.; yellow grease 7¾¢ lb.

New Orleans: Demand good; trend steady; supply sufficient; tank cars 8¼@8¾¢ lb.; returnable drums 10@10¼¢ lb.

BARLEY FEED

Seattle: Demand fair; trend firmer; supply good; whole $55, ground $55, rolled $57, all ex-warehouse, l.c.l., sacked.

Milwaukee: Demand fair; supply good; needles 90¢@$1.06; ground $26, sacked, Milwaukee.

Portland: Demand good; supply ample; trend unchanged; rolled $55, ground $56.

Los Angeles: Demand steady; trend firmer; supply ample; standard rolled $2.96 cwt., sacked; standard ground $2.96 cwt., sacked.

Boston: Demand slow; supply light; $45.

Chicago: Demand dull; supply light; $36.

Baltimore: Demand dull; supply light; $46.40.

Philadelphia: Demand slow; supply fair; pulverized $44.50.

New Orleans: Demand fair; trend firmer; supply adequate; ground $62@64.

San Francisco: Demand fair; supply ample; rolled $56, ground $55.

Ogden: Supply average; rolled $41@45; whole $37@41.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $30.21; 200 mesh fine $29.96.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50; f.o.b. Belle Fourche, S.D., minimum 30-ton carlot: 80 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand good; trend steady; supply normal; $95@100.

BLOOD MEAL

New Orleans: Demand fair; trend steady; supply ample; $90@110.

San Francisco: Demand slow; supply tight; $6 a unit of ammonia.

Ogden: Supply average; $102.50, f.o.b. Ogden.

Portland: Demand good; supply ample; trend unchanged; $100.

Los Angeles: Demand and trend steady; supply adequate; $5.75 a unit of ammonia.

Chicago: Demand fair; supply ample; $110@120, guaranteed 80% protein.

Cincinnati: Demand fair; trend steady; supply fair; $121@125.

Louisville: Demand much better; trend steady; supply normal; $95@100.

BONE MEAL (STEAMED)

Ft. Worth: Demand quiet; supply adequate; $85, sacked, f.o.b. Ft. Worth, local manufacture.

Cincinnati: Demand fair; trend steady; supply ample; $80, sacked, f.o.b. Cincinnati.

Louisville: Demand slow; trend steady; supply light; $75@80.

Chicago: Demand fair; supply short; $67.50@80.

Los Angeles: Demand slow; trend unchanged; supply adequate; imported $68.

Portland: Demand good; supply ample; trend unchanged; $95.

Boston: Demand and supply steady; $87.

Buffalo: Demand good; trend stronger; supply limited; $87.50, sacked.

Seattle: Demand and trend steady; supply good; $88.50, ex-dock, truck lots.

New Orleans: Demand fair; trend steady; supply ample; $87@88.50.

San Francisco: Demand good; supply ample; $75.

BREWERS DRIED GRAINS

Ft. Worth: Demand slow; supply moderate; 26% $56.85, delivered Ft. Worth, October.

Cincinnati: Demand fair; trend steady; supply fair; $55@56.

Louisville: Demand good; trend steady; supply normal; $50.

Chicago: Demand poor; supply adequate; 26% $46@47.

Boston: Demand spotty; supply ample; 26% $58@59; 22% $56@57.50.

St. Louis: Demand good; trend steady; supply limited; $47 sacked, $40 bulk.

Los Angeles: Demand fair; trend steady; supply adequate; $49 bulk, $53 sacked.

Buffalo: Demand and supply fair; trend steady; $49.50, bulk, Boston.

Philadelphia: Demand slow; supply fair; $57.50.

San Francisco: Demand fair; supply ample; $54.

New Orleans: Demand fair; trend steady; supply sufficient; 26% $49@51.

Milwaukee: Demand and supply good; $48.50.

BREWERS DRIED YEAST

Buffalo: Demand good; trend firmer; supply limited; $10.75 cwt.

San Francisco: Demand fair; supply good; 10¢ lb.

St. Louis: Demand fair; supply adequate; 10¢ lb. in carlots; 10½¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11½@12¢ lb. in less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Omaha: Demand and supply good; 9½¢ lb.

Los Angeles: Demand fair; trend steady; supply adequate; 9½¢ lb. in 5-ton lots; 11¢ lb. less than 5-ton lots.

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

Boston: Demand and supply limited; 11¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¼@12½¢ l.c.l.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Louisville: Demand fair; trend steady; supply good; 10½¢ lb. asked.

BUTTERMILK-CONDENSED

Chicago: Demand slow; supply adequate; $3.25@3.50 cwt. in carlots.

Ogden: Supply normal; $4.95, 100-lb. drum.

San Francisco: Demand and supply fair; $5 cwt.

Philadelphia: Demand dull; supply fair; $4.25 cwt.

New Orleans: Demand fair; trend steady to stronger; supply adequate; $4.95@5.

Los Angeles: Demand slow; trend steady; supply adequate; 5½¢ lb. in 100-lb. lots; 4¾¢ lb. in 500-lb. lots.

Boston: Demand slow; supply light; 3½¢ lb.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.30, flour $10.30.

Buffalo: Crystals $16.16, flour $11.16.

Toledo: Crystals $15.06, flour $13.06.

Boston: Crystals $16.69, flour $11.69.

Limecrest, N. J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Los Angeles: Demand and trend steady; supply ample; $10.25.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

Minneapolis: Plain $11; iodized (½ lb. KI per ton) $14.45; iodized manganesed $15.90, in 100-lb. bags.

Chicago: Plain $8.90 ton in 100-lb. bags, delivered.

CHARCOAL

Chicago: Demand quiet; supply adequate; poultry charcoal $102 in 50-lb. multiwalls.

Los Angeles: Demand and trend steady; supply ample; hardwood poultry $156, less than ton lots; $144.40, ton lots.

Boston: Demand and supply light; $95, nominal.

Cincinnati: Demand good; trend steady; supply adequate; briquets $120, 25-lb. bags, f.o.b. warehouse, Cincinnati.

San Francisco: Demand steady; supply ample; $54.50.

COCONUT MEAL

Seattle: Demand and trend steady; supply ample; $69, delivered, truck lots.

Portland: Demand slow; supply ample; trend unchanged; $63.

Los Angeles: Demand slow; trend weaker; supply adequate; copra cake $58@60, spot, offshore, October.

San Francisco: Demand fair; supply ample; solvent $55, expeller $59.

COD LIVER OIL (FORTIFIED)

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 16½@19¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York and Pennsylvania.

Boston: Demand slow; supply ample; 600 D, 2,250 A 21¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 17½¢ lb.

CONDENSED FISH SOLUBLES

New York: Demand and supply fair; trend lower; 4¾@5¢ lb., f.o.b. eastern shore.

New Orleans: Demand very good; trend firm; supply very limited; 50% solids $95@100, tank cars, f.o.b. Gulf.

Los Angeles: Demand fair; trend steady; supply adequate; 5¢ lb.

Boston: Demand good; supply scarce; 5¢ lb., nominal.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $46.59, meal $73.59.

Atlanta: Feed $52.98, meal $79.98.

Birmingham: Feed $52.15, meal $79.15.

Boston: Feed $51.54, meal $78.54.

Chicago: Feed $40, meal $67.

Cleveland: Feed $47.93, meal $74.93.

Denver: Feed $50.20, meal $77.20.

Ft. Worth: Feed $48.65, meal $75.65.

Indianapolis: Feed $45.15, meal $72.15.

Kansas City: Feed $40, meal $67.

Louisville: Feed $47, meal $74.

New Orleans: Feed $49.78, meal $76.78.

New York: Feed $51.12, meal $78.12.

Norfolk: Feed $50.40, meal $77.40.

Philadelphia: Feed $50.71, meal $77.71.

Pittsburgh: Feed $48.65, meal $75.65.

St. Louis: Feed $40, meal $67.

CORN OIL MEAL

Cincinnati: Demand poor; trend steady; supply adequate; $49.

Louisville: Demand dull; trend steady; supply normal; $48.98.

COTTONSEED OIL MEAL

Kansas City: Demand fair to slow, but showing improvement at lower levels this week; prices off $2@3 from a week ago; supply ample; old process $50@51, sacked, Memphis; solvent $43@46.50, sacked, Memphis.

Ft. Worth: Demand poor; supply sufficient; carlots, 41% old process $54.50@55, f.o.b. north and central Texas mills, depending on location; solvent 41% low gossypol $56.50, delivered Ft. Worth; pellets $1 additional; cottonseed hulls $20.50, delivered Ft. Worth.

Memphis: Demand poor; trend steady; supply plentiful; prime 41% protein, old process $50, sacked; new process, 41% solvent $47, sacked.

Portland: Demand slow; supply ample; trend unchanged; $68.

St. Louis: Demand slow; trend firmer; supply ample; $52.50.

Boston: Demand fair; supply adequate; $73.

Chicago: Demand slow; supply adequate; hydraulic $62@63.50; solvent $59.50@60.

Cincinnati: Demand poor; trend easy; supply adequate; solvent $58@60; old process $60@62.50.

Wichita: Demand slow; supply sufficient; 41% old process $65.

Louisville: Demand fair; trend easy; supply ample; old process $60.50, new process $58.

Ogden: Supply normal; 41% $70@75.

Buffalo: Demand poor; trend steady; supply adequate; $71.50, sacked, Boston.

Seattle: Demand fair; trend steady; supply good; $69, delivered, truck lots, 41% expeller process.

Philadelphia: Demand dull; supply fair; $71.

San Francisco: Demand good; supply ample; expeller $58.50; solvent $59.50.

New Orleans: Demand fair; trend easier; supply ample; 41% old process $70@70.50.

Atlanta: Demand fair; trend weak; supply ample; 41% $60, sacked, immediate.

Omaha: Demand poor; supply ample; 41% solvent $64, pellets $67.

Los Angeles: Demand slow; trend steady; supply ample; $57@58.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL, POWDERED

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand steady; trend firm; supply adequate; 10½@11¢ lb.

Cincinnati: Demand poor; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb., ton lots and less 17¢; 12,000,000 units per lb., 5 tons to a carload 28¢ lb.; ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $58 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $55 in bulk.

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.50 net ton, f.o.b. Houston, 100-lb. multiwall bags; $66.50 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $67.10 net ton, f.o.b. Wales, in 100-lb. multiwall bags, $64.10 in bulk.

Boston: Demand fair; supply light; $85, f.o.b. eastern shipping points.

Cincinnati: 18% phosphorus $78.98; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Texas City, Texas: 19% minimum phosphorus, 25% minimum calcium, 28% maximum, 0.11% maximum fluorine $76 net ton, f.o.b. Texas City in 100-lb. multiwall bags.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $90.30, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $79.55, f.o.b. Trenton in 100-lb. multiwall bags.

Portland: Demand good; supply ample; trend unchanged; $105.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $79.55 ton, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $79.55 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn., less than 20,000 lb. $89.55; 21% phosphorus, 20,000 lb. or more $90.30, basis Chicago Heights and Nashville, less than 20,000 lb. $100.30; bulk, boxcars or hoppers, $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $79.55; freight equalized with closest producing point, carload basis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $90.25, delivered; $3 less in bulk.

Cincinnati: 18½% phosphorus $88@89.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; dark $53, light $52.

Louisville: Demand good; trend steady; supply ample; production increasing; bourbon grains: light or dark $51, solubles $77.

San Francisco: Demand fair; supply ample; solubles $85.

Boston: Demand good; supply spotty; light $59@60, dark $61.

Philadelphia: Demand slow; supply light; $61.

Buffalo: Demand and supply fair; trend steady; $55, bulk, Boston.

Seattle: Demand dull; trend steady; supply ample; $63, delivered, truck lots.

DRIED BEET PULP

Ft. Worth: Demand slow; supply sufficient; carlots, 50-lb. papers $58@59, October-November-December, delivered Ft. Worth.

Milwaukee: Demand and supply good; plain or molasses pulp $49.40, delivered, Milwaukee.

Boston: Demand slow; supply adequate; $58 in papers; $59 in 100-lb. burlaps; $59.50 in 50-lb. burlaps.

Los Angeles: Demand and trend steady; supply ample; molasses $45.50.

Atlanta: Demand slow; trend steady; supply ample; $56.50, sacked, immediate.

Buffalo: Demand poor; trend steady; supply fair; $59, sacked, Boston.

Chicago: Plain or molasses pulp $49.40, delivered Chicago.

Portland: Demand good; supply ample; trend unchanged; $52.

Ogden: Supply average; $43@48.

New Orleans: Demand spotty; trend easier; supply adequate; $58@59.

Cincinnati: Demand fair; trend steady; supply adequate; $55@56.

Seattle: Demand slow; trend easy; supply good; $43, delivered, carlots (new crop).

San Francisco: Demand good; supply fair; $42.50.

DRIED BUTTERMILK

Chicago: Demand strong; supply scarce; medium acid $9.25@9.50; sweet cream $9.50@9.75 cwt. in carlots.

Ft. Worth: Demand very slow; supply light; local production $10 cwt., f.o.b.

Buffalo: Demand good; trend firmer; supply limited; $11.15 cwt.

Wichita: Demand slow; supply sufficient; $8 cwt.

Minneapolis: Demand exists for any supplies available; $9@9.50.

Los Angeles: Demand slow; trend steady; supply adequate; 11¢ lb.

New Orleans: Demand slow; supply sufficient; trend stronger; 9@9½¢ lb.

Milwaukee: Demand and supply fair; $11.50 cwt.

Ogden: Supply average; $7.25 cwt.

Louisville: Demand slow; trend steady; supply normal; 10½@11¢ lb.
San Francisco: Demand fair; supply ample; 11¢ lb.

DRIED CITRUS PULP

San Francisco: Demand good; supply fair; meal $52.
New Orleans: Demand slow; trend steady; supply adequate; $52@57.15, immediate.
Boston: Demand poor; supply spotty; $57.
Atlanta: Demand good; trend steady; supply limited; $49, sacked, immediate; meal $39, sacked, immediate.
Buffalo: Too scarce to quote.
Los Angeles: Demand and trend steady; supply limited; orange pulp $36 bulk, $41 sacked; lemon pulp $34 bulk, $39 sacked.

DRIED SKIM MILK

Milwaukee: $10.50 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; 10¼@10¾¢ lb.
Ogden: Supply average; $15.15, 100-lb. drum.
Portland: Demand good; supply ample; trend unchanged; $12.50 cwt.
Los Angeles: Demand slow; trend steady; supply adequate; 14¢ lb., less than ton lots; 13¾¢ lb., in ton lots.
Minneapolis: Demand exists for any supplies available; $10.50@11.
Boston: Demand slow; supply fair; 12¢ lb.
Louisville: Demand slow; trend steady; supply normal; 11½@12¢ lb.
New Orleans: Demand fair; trend steady; supply ample; 10¾@11⅛¢ lb.
Buffalo: Demand good; trend steady; supply ample; spray $11 cwt.; rolled $11.75 cwt.
Chicago: Demand slow; supply adequate; $10@10.25 cwt. in carlots.
Philadelphia: Demand dull; supply fair; $12.50 cwt.
San Francisco: Demand and supply fair; 13½¢ lb.

DRIED WHEY

Ft. Worth: Demand fair; supply adequate; carlots, standard $6.10 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.
Kansas City: Demand steady; trend unchanged; supply adequate; $5.10 cwt., f.o.b. producing plant for both regular and partially delactosed.
Chicago: Demand slow; supply adequate; $5.20@5.30 cwt. in carlots.
Philadelphia: Demand dull; supply fair; $6.25 cwt.
Ogden: Supply average; $6.90 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; $5.10 cwt.; sweet $5.75 cwt.
New Orleans: Demand slow; trend steady; supply ample; $6.05@6.10 cwt.
Louisville: Demand slow; trend steady; supply normal; 6@6⅛¢ lb.
Seattle: Demand and trend steady; supply good; $6.25 cwt., ex-warehouse, l.c.l.
San Francisco: Demand steady; supply good; $5.50 cwt.
Boston: Demand steady; supply plentiful; $5.90 cwt.
Portland: Demand improved; supply ample; trend unchanged; $6.05.
Minneapolis: Supply tight; demand exists for any supplies available; $5.50@5.75.
Los Angeles: Demand slow; trend unchanged; supply adequate; $5.75 cwt. in carloads; $6 cwt., l.c.l.

FEATHER MEAL (HYDROLYZED)

Boston: Demand fair; supply light; $85, f.o.b. eastern shipping points.

FISH MEAL

Ft. Worth: Demand fair; supply sufficient; Canadian herring $2, nominal, a unit protein, f.o.b. northwestern Canada; 60% protein, or better, menhaden, subject to catch $136, f.o.b. Port Arthur; imported 60% protein $135, f.o.b. Houston.
Chicago: Demand slow; supply fair; eastern menhaden fish meal, 60% protein $128@133; western blended, 60% protein $118; Gulf $128@136; Northwest herring-salmon blend $120@121; Canadian herring, 73% protein $2@2.05 a unit of protein; 60% blended $146, delivered Midwest points.
Cincinnati: Demand fair; trend steady; supply adequate; $150.
Minneapolis: Price trend unchanged; demand quiet; supplies ample; 70% Canadian herring $2 a unit of protein, West Coast; 60% meal $144, delivered, Minneapolis.
Portland: Demand slow; supply ample; trend unchanged; $1.95 a unit of protein.
Boston: Demand active; supply fair; 60% $133.
Atlanta: Demand fair; trend steady; supply ample; 60% $141, sacked, immediate.
Los Angeles: Demand fair; trend steady; supply adequate; $2 a unit of protein.
Buffalo: Demand good; trend higher; supply limited; 60% protein menhaden $142 bulk, $147 sacked.
Louisville: Demand slow; trend steady; supply normal; $150@155.
Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $161@153.
Seattle: Demand fair; trend firm; supply ample; $2.05 a unit protein, ex-dock, Alaska herring.
New Orleans: Demand good; trend steady; supply very light; menhaden 60% $132@135; scrap $127@129, burlaps, Gulf; sardine, 60% South Africa $133@135, burlaps, Mobile.
Milwaukee: Demand good; supply fair; 60% $159, Milwaukee.
San Francisco: Demand fair; supply ample; $2.07½ a unit of protein.

HAY

Ft. Worth: Demand slow; supply sufficient; carlots, baled, No. 1 alfalfa $41@43, No. 2 $39@41; prairie No. 2 $31@33; No. 2 Johnson $29@31, delivered Texas common points.
Louisville: Demand dull; trend weak; supply good; No. 1 hay, any variety $20@22, No. 2 about $2 ton less; straw $18@20.
Philadelphia: Demand slow; supply light; $29.
Cincinnati: Demand poor; trend steady; supply adequate; No. 1 timothy $20.50; No. 1 red clover $22; No. 1 second cutting green alfalfa $24; No. 1 red clover, mixed $24; wheat or oat straw $18.
Ogden: Supply normal; $1 bale; $15@17 in field or barn.
Los Angeles: Demand poor; trend unchanged; supply ample; U.S. No. 1 $33@34; U.S. No. 2 leafy $30@32; U.S. No. 2 green $29.50@30.50; U.S. No. 2 $26@28.
Boston: Demand and supply steady; No. 2 timothy $38@39; second cutting alfalfa $50.
Portland: Demand improved; supply ample; trend unchanged; $24@25.
Wichita: Demand slow; supply ample; prairie $16@18, alfalfa $16@20.
Seattle: Demand slow; trend steady; supply good; alfalfa, U.S. No. 2 green $23, delivered, truck lots.

HOMINY FEED

Kansas City: Fair demand with buyers showing more interest now than milo which is stronger; white or yellow $32.50@33, bulk, Kansas City.
Chicago: Demand fair; supply adequate; $42@42.50.
Memphis: Demand nil; trend lower; supply ample; white $46.50, yellow $46.50.
St. Louis: Demand slow; trend steady; supply ample; yellow $42.
Boston: Demand and supply steady; $52.
Milwaukee: Demand good; supply fair; $43, sacked, Milwaukee.
Cincinnati: Demand poor; trend steady; supply adequate; $44.
Buffalo: Demand fair; trend steady; supply adequate; $48, bulk, Boston.
Louisville: Demand slow; trend stronger; supply ample; $44.30.
Seattle: Demand slow; trend weak; supply good; $57, delivered, sacked, carlots.
New Orleans: Demand fair; trend stronger; supply adequate; $46@46.50.

LINSEED OIL MEAL

New Orleans: Demand slow; trend firmer; supply limited; 32% or higher protein $69.50@70.
San Francisco: Demand fair; supply ample; $65.
Chicago: Demand fair; supply adequate; solvent $57@57.50; expeller $63@63.50.
Kansas City: Demand limited to occasional cars in this area; prices off $1.50 from week ago in line with easiness in other protein meals; supply ample; new process meal $44.50@45, bulk, Minneapolis; old process $51.50@52.
Minneapolis: Demand slow; supply good; price trend easier; 34% meal, bulk, Minneapolis $44.50@45.50 October, $48 November-December; 22% flaxseed screenings oil feed $32@32.50.
Portland: Demand slow; supply ample; trend unchanged; $82.
Boston: Demand and supply fair; $71.
Omaha: Demand poor; supply ample; 34% solvent $58.50, pellets $61; 32% expeller $67, pellets $69.50.
Los Angeles: Demand dull; trend unchanged; supply adequate; local production, 29% protein $66.
Ft. Worth: Demand slow; supply adequate; carlots, 34% extracted, October $75.13, November-December $77.13.
Cincinnati: Demand poor; trend steady to easy; supply fair; new process $62.50@62.75; old process $68.50@68.75.
Wichita: Demand fair; supply insufficient; 34% $76.
Louisville: Demand slow; trend easy; supply ample; old process $71.30, new process $64.30.
Milwaukee: Demand fair; supply good; old process $63, new process $55.50.
Philadelphia: Demand and supply fair; 34% $68.
Seattle: Demand slow; trend steady; supply limited; $83, delivered, truck lots, 29% protein.

MALT SPROUTS

Chicago: Demand fair; supply decreasing; No. 1 $43.50@44.
Boston: Demand limited; supply adequate; $46@48.
Milwaukee: Demand good; supply fair; oddweights $44; evenweights $47.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $49@49.50.
New Orleans: Demand fair; trend steady; supply adequate; No. 1 $47@50.

MEAT AND BONE MEAL

Ft. Worth: Demand fair; supply sufficient; meat and bone, 50% $72@73, f.o.b. or delivered Ft. Worth.
Kansas City: Demand slow; trend easier; supply adequate; 50% meat and bone scraps $77@78, bulk, for prompt shipment, with some offerings at $75.50 reported for November-December.
New York: Demand fair; trend steady; supply good; 50% $72.50, 55% $77.50, bulk; 50% $75.50, 55% $80.50, sacked.
Chicago: Demand good; supply fair; 50% protein $75@80.
Ogden: Supply average; $87.50.
Cincinnati: Demand fair; trend easy; supply fair; 50% $77, sacked, f.o.b. Cincinnati.
Wichita: Demand good; supply sufficient; 50% $85, f.o.b. plant; 55%, no quotations, no offerings.
Louisville: Demand fair; trend steady; supply ample; $75@80.
Buffalo: Demand fair; trend lower; supply ample; 50% meat and bone meal $77.50 bulk; $82.50 sacked.
Seattle: Demand good; trend firm; supply fair; $85, ex-warehouse, 50% protein.
San Francisco: Demand good; supply ample; $1.50 a unit of protein.
New Orleans: Demand good; trend firm; supply sufficient; $85@87.50 on 50%.
Omaha: Demand fair; supply adequate; $87.50.
Los Angeles: Demand fair; trend steady; supply ample; $1.60 a unit of protein.
St. Louis: Demand fair; trend lower; supply good; 50% $82.50.
St. Paul: Demand slow; supply good; 50% meat and bone meal $82@86.
Portland: Demand slow; supply ample; trend unchanged; $1.70 a unit of protein.
Boston: Demand and supply steady; $1.15 a protein unit; converted 50% $70.

MILLFEED

Minneapolis: Demand slightly improved, especially on red dog; mill running time less than last week; supplies adequate; bran $29.50@30, standard midds. $29.50, flour midds. $38, red dog $42.
Kansas City: Demand for bran is good, but interest light in shorts and middlings; mills are sold up on bran, with good mixed car and small buyer trade helping to keep market clear of supplies; offerings of shorts and middlings ample; bran $30@30.50, shorts $32@32.50, sacked; bran $25.50@26.50, middlings $26@27, shorts $27.75@28.75, bulk.
Omaha: Demand poor; supply ample; bran $30.50, shorts $32.50, standard midds., bulk $28.
Ft. Worth: Demand fair for bran, slow for shorts; supply light on bran, sufficient on shorts; carlots, burlaps, prompt, bran $36.50@37.50; gray shorts $40.50@41.50, delivered Texas common points; $2 higher on bran and unchanged on shorts compared with previous week.
Wichita: Demand good, with bran in stronger demand than shorts; supply about offsets demand; basis Kansas City: bran $29@29.50, shorts $32@32.50; bran advanced $1.75 ton and shorts were unchanged to 25¢ ton higher, compared with the preceding week.
Chicago: Prices generally were unchanged during the week ending Oct. 16, but traders failed to develop much enthusiasm. Prices were roughly at ten-year lows, but buyers still believed there was a possibility that the market might dip more. Quotations: bran $32@33, standard midds. $34@35, flour midds. $44@45, red dog $46@49.50.
St. Louis: Demand slow; trend steady; supply ample; bran $35 sacked, $29 bulk; shorts $37 sacked, $31 bulk; middlings $30, bulk.
Cincinnati: Demand poor; trend steady to easy; supply adequate; bran $36@38; middlings $39@40.
Louisville: Demand fair; trend stronger; supply ample; bran $40.65, mixed feed $42.65, shorts $43.65, middlings $41.80.
Buffalo: There was a little seasonal pickup in bran. Demand was reported from eastern New York and the New England area. Shipping positions were in good shape and prices of both bran and middlings were unchanged. Red dog declined $1.50. Quotations Oct. 16: bran $34.50@35, standard midds. $35.50@36, red dog $48@48.50. The bulk differential on bran was $5@5.50 and on middlings it was $4@4.50.
New York: Demand fair; trend steady; supply good; bran $43.50@44; standard midds. $45@45.50.
Boston: Demand very slow; supply ample; bran and middlings $44.
Philadelphia: Demand spotty; supply fair; bran $43, standard midds. $43, red dog $57.
New Orleans: Demand fair; trend weak; supply plentiful; bran $37@38.75; shorts $42@43.75.
Memphis: Demand poor; trend up; supply ample; wheat bran $38, gray shorts $40, standard midds. $39.
Seattle: Demand fair; trend weak; supply ample; $35, delivered common transit points, carlots.
Portland: Demand good; trend steady; supply ample; $37.
Ogden: Supply normal; to Utah and Idaho: red bran and mill run $37, middlings $42; to Denver: red bran and mill run $44, middlings $49; to California: red bran and mill run $44.50, middlings $49.50, f.o.b. San Francisco and Los Angeles.
San Francisco: Demand fair; supply ample; $41; red bran $46.
Los Angeles: Standard mill run $42@42.50, demand slow, trend weaker, supplies ample; red bran $46, demand slow, trend steady, supplies ample.

MINERAL FEED

Ft. Worth: Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $90, block $103; hog mineral phosphorus, 3½% granules $88; phosphorus 2% $78 (all in 50-lb. paper bags).
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phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Portland: Demand improved; trend unchanged; supply ample; $42.

Ogden: Supply normal; $102 in 50-lb. blocks; $98, granular, 50-lb. bags.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $36, ex-warehouse.

Wichita: Demand good; supply ample; all-purpose with iodine, 50-lb. blocks $96; 100-lb. bags $90, f.o.b. plant.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

MOLASSES

Milwaukee: Demand fair; supply good; blackstrap 16¢ gal., New Orleans.

Ft. Worth: Demand slow; supply adequate; blackstrap 18¢ gal., f.o.b. Houston; delivered Ft. Worth truck, $38.48, seller's market price on date of shipment.

New York: Demand poor; trend lower; supply good; blackstrap 21¢ gal., tank cars, tank wagons, f.o.b. New York.

Kansas City: Demand light but improved somewhat following price cuts; offerings ample; prices off 1@1½¢ for week; 14@14¼¢ gal., tank cars, New Orleans.

New Orleans: Demand slow; trend down; supply abundant; 14¢ gal.

Memphis: Demand poor; trend lower; supply ample; blackstrap 14½¢ gal., tank car, f.o.b. New Orleans.

Boston: Demand fair; supply plentiful; 21½¢ gal. in tank cars.

Atlanta: Demand good; trend steady; supply limited; citrus $25, bulk, f.o.b. Florida producing points.

Los Angeles: Demand good; trend steady; supply ample; $28 bulk in tank cars; $28.25 bulk in tank trucks.

Buffalo: Demand fair; trend steady; supply good; 21½¢ gal., f.o.b. Albany.

Cincinnati: Demand fair; trend easy; supply adequate; 15¢ gal., New Orleans.

Louisville: Demand slow; trend easy; supply ample; 14¾¢ gal., tank car lots, Gulf ports.

New Orleans: Demand slow; trend easier; supply adequate; tank cars 15½¢, trucks 16¢, customers 600-lb. returnable drums $9.87; Houston 19¢ gal.; Port Everglades, Fla., 18¢ gal.

Minneapolis: Demand fair; supplies plentiful; price trend weaker; 14½@15¢ gal., f.o.b. New Orleans.

Seattle: Demand slow; trend weak; supply good; $28, f.o.b. Seattle, tank car lots or truck lots.

San Francisco: Demand and supply good; $33, f.o.b. cars, Richmond, Cal.

NIACIN

New York: Trend steady; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5 and 2¼-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Chicago: Demand fair; supply adequate; reground oat feed $13@13.50; fine ground feeding oatmeal $70@71; feeding rolled oats $80@82.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $45.35; reground oat millfeed, 8% protein $28.75, 3% $24.35.

New Orleans: Demand fair; trend steady; supply adequate; pulverized $66.50@67.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $21.50, pulverized white oats $49, rolled oats $87.50@88.50.

Los Angeles: Demand slow; trend weaker; supply adequate; pulverized, local production $61.

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Portland: Demand slow; supply ample; trend unchanged; rolled $60, ground $57, cleaned $59.

Memphis: Demand poor; trend steady; supply ample; 2½% protein, reground oat feed $20.

Boston: Demand fair; supply ample; white pulverized $53, ground mixed $46.20, reground oat feed $20.50.

Philadelphia: Demand slow; supply fair; pulverized white oats $52.50; Canadian oat feed $25.50, nominal, supply very light; domestic oat feed $24.

Minneapolis: Demand fair but slow on oat feed; prices somewhat stronger; supplies plentiful; feeding rolled oats $82.50@84; standard pulverized $44.50; feeding oatmeal $69@70; crimped $60.50; reground oat feed $15.

Louisville: Demand fair; trend steady; supply ample; reground $21.30, off $1.50 ton; rolled $86.30; feeding $79.30; crimped white $70.30; pulverized white $50.30.

Seattle: Demand fair; trend firmer; supply ample; whole $58, ground $58, rolled $60, all ex-warehouse, l.c.l., sacked.

OYSTER SHELL

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Louisville: Demand good; trend steady; supply normal; in 80-lb. paper bags $23.17, in 50's $23.42, in 25's $25.67.

Seattle: Demand and trend steady; supply good; eastern $39, l.c.l., ex-warehouse.

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

New Orleans: Demand good; trend steady; supply adequate; $14.80@15.

Boston: Demand good; supply plentiful; $25.24 in paper.

Los Angeles: Demand and trend steady; supply ample; $14.80.

Portland: Demand good; supply ample; trend unchanged; grits $27, flour $18; western $30, demand good, trend higher, supply ample; eastern $38.50, demand good, trend unchanged, supply ample.

PEANUT OIL MEAL

Milwaukee: Demand and supply good; 26% $48.

Atlanta: Demand slow; trend strong; supply limited; 45% $58.50, sacked, immediate.

PEAT MOSS

Philadelphia: Demand slow; supply light; $3.12 bale, f.o.b. pier.

Los Angeles: Demand slow; trend steady; supply ample; Canadian, 6.1 cu. ft. bales $3.70.

Portland: Demand slow; supply ample; trend unchanged; $3.25.

Boston: Demand and supply steady; $3.15 bale in carlots.

Chicago: Demand and supply moderate; $3.85@3.95 standard 7½ cu. ft. bale.

Seattle: Demand fair; trend steady; supply good; $3.50 bale, l.c.l., ex-warehouse.

San Francisco: Demand fair; supply ample; $3.75 bale.

POTASSIUM IODIDE, U.S.P.

New York: Trend steady; granular or crystals $1.90 lb. in 250-lb. drums, $1.92 lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.81 lb. in 250-lb. drums or 200-lb. lots, $1.83 lb. in 100-lb. drums, $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania; freight allowed to destination on 100-lb. drums or larger packings.

Cincinnati: Trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.81; 200 lb. in 100-lb. drums $1.81; 100-lb. drums $1.83; 25-lb. drums $1.86; f.o.b. Cincinnati.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in 3.36 to 15 gm./lb. mixtures, freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4¼¢ gram in 3.36 to 15 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand fair; supply moderate; carlots, rice bran $24@25, prompt shipment, f.o.b. south Texas rice mills; hulls $2.50, f.o.b. mills.

Atlanta: Demand slow; trend steady; supply ample; bran $39, sacked, immediate.

Los Angeles: Demand slow; trend unchanged; supply adequate; bran, California production, high fat content $46.

San Francisco: Demand fair; supply ample; bran $45, polished $49.

New Orleans: Demand fair; trend steady; supply sufficient; bran $46@47, Louisiana origin.

SCREENINGS

Buffalo: Demand and supply good; trend steady; ground, sacked $27.75, New York, lake and rail; bulk, unground $22.50, New York.

Ft. Worth: Demand slow; supply sufficient; 12% protein, ground $29@30, nominal, prompt, sacked, delivered Ft. Worth.

Minneapolis: Demand good on oil types; supplies fair; price trend about unchanged; country run $15@22, lights $3@10, mediums $10@20, heavies $20@30; Canadian, bulk, Duluth $13.50, nominal; Canadian ground $22.50; flax screenings $22; oil type flax screenings 15% basis $28.

Chicago: Demand fair; supply plentiful; ground grain screenings $27.50; Canadian bulk $19.

Cincinnati: Demand fair; trend steady; supply fair; Canadian $25.50, barley $18.50@24.50, both bulk, delivered Cincinnati.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $18.85@19.10.
Buffalo: $23.65@23.90.
Chicago: $23.10@23.35.
Cincinnati: $21.80@22.
Des Moines: $23.40@23.85.
Kansas City: $23.20@23.45.
Memphis: $20.50@20.70.
Minneapolis: $24.25@24.55.
Philadelphia: $22.65@22.90.
St. Louis: $22.50@22.75.

SORGHUMS

Cincinnati: Demand fair; trend steady; supply adequate; $2@2.20.

Los Angeles: Demand fair; trend easier; supply ample; milo $2.32½ cwt., bulk.

Ft. Worth: Demand fair; offerings light; carlots, bulk, No. 2 yellow milo $1.97@2, delivered Texas common points.

SOYBEAN OIL MEAL

Decatur: Demand and supply fair; 44% bulk, unrestricted $47@47.50.

Ft. Worth: Demand good; supply sufficient; carlots, 44% $67@69.50, depending on origin and tonnage; trucks $62.50.

Kansas City: Demand apparent for nearby only and limited to buyers' minimum needs; producers seem to be in good shape, with no pressure on market; prices off $1 from week ago; $44@44.50, bulk, Decatur, for Kansas City and western shipment; $46.50@47 for unrestricted shipment.

Minneapolis: Demand fair; supply adequate; price trend slightly lower; $39.50, bulk, Decatur.

Chicago: Prices held steady during the week ending Oct. 16, and trade was at a fair pace. Buyers generally resisted going too far out on delivery dates, however. Quotations: 44% soybean oil meal $56.50@57.

Los Angeles: Demand slow; trend weaker; supply ample; $76.84@77.34.

Atlanta: Demand slow; trend steady; supply ample; 44% $62, sacked, immediate.

Omaha: Demand poor; supply ample; 44% solvent $59.50, pellets $62; 41% expeller $63.50.

Portland: Demand slow; trend weak; supply ample; $42.50.

Memphis: Demand good; trend steady; supply plentiful; prime 44% solvent $52, sacked, f.o.b. Memphis.

St. Louis: Demand and supply fair; trend steady; $56.50.

Boston: Demand cautious; supply ample; 44% $46, 50% $52, both f.o.b. Decatur.

Cincinnati: Demand poor; trend steady; supply adequate; $46.50@47.50, bulk, Decatur.

Ogden: Supply normal; $57@92.

Wichita: Demand slow; supply ample; 44% $63, 50% $71, f.o.b. Wichita.

Louisville: Demand fair; trend stronger; supply normal; $59.23.

Philadelphia: Demand and supply fair; $46, bulk, Decatur.

Seattle: Demand and trend steady; supply good; $79, delivered, carlots.

Milwaukee: Demand and supply good; $44.50, bulk, Decatur.

San Francisco: Demand fair; supply ample; $76.84

New Orleans: Demand limited; trend unsettled; supply light; 44% $67.50@68.

TANKAGE

New Orleans: Demand fair; trend steady; supply light; 60% $89@93.

Kansas City: Demand slow; trend easier; supply adequate; 60% digester $78@82, sacked, prompt shipment, with offerings $2.50 lower reported for November-December shipment.

Ft. Worth: Demand fair; supply sufficient; 60% digester $80@82, f.o.b. Ft. Worth.

St. Paul: Demand slow; supply adequate; 60% digester $83@85.

Chicago: Demand and supply fair; 60% protein $75@82.50.

Omaha: Demand fair; supply adequate; $87.50.

St. Louis: Demand good; trend lower; supply short; 60% $83.50.

Cincinnati: Demand slow; trend easy; supply fair; 60% digester $87 ton, sacked, f.o.b. Cincinnati.

Wichita: Demand good; supply sufficient; 60% $85, f.o.b. plant.

Louisville: Demand fair to good; trend steady; supply normal; 60% $77.50@82.50.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; supply good; 1,000 lb. in 100-lb. drums $1.70 lb., less than 1,000 lb. in 100-lb. drums $1.75; freight allowed to destination.

New York: Demand and supply good; trend steady; 50- and 100-lb. drums $1.80 lb., 25-lb. drums $1.85 lb., f.o.b. manufacturing plants, freight allowed to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 50- and 100-lb. drums $1.80 lb., 25-lb. drums $1.85 lb., f.o.b. manufacturing plants, freight allowed to destination.

WHEAT GERM MEAL

Buffalo: Demand fair; trend lower; supply adequate; commercial grade $51, sacked, f.o.b. Buffalo.

New Orleans: Demand fair; trend easier; supply adequate; $64@66, cottons.

Sharp Drop Reported In Grain Exports

BALTIMORE, MD.—Grain exports from the port of Baltimore dropped sharply in September compared with a year ago, according to the monthly report of the Baltimore Chamber of Commerce.

A total of 425,766 bu. wheat was exported from the port last month as against 2,103,049 bu. in September, 1956. Shipments of corn rose, with 1,316,700 bu. exported, compared with 1,296,424 bu. in September a year ago.

Other exports were: Oats, 210,000 bu.; rye, 56,000; barley, 46,666; and soybeans, 71,876 bu.

HATCH

(Continued from page 1)

incubators on Oct. 1 was 10% less than a year earlier.

Heavy breed poults hatched during September, of which 95% were heavy white breeds, totaled 331,000—a decrease of 1% from a year ago. The number of heavy breed poult eggs in incubators on Oct. 1 was 587,000—about the same as a year ago.

Light breed poults hatched in September totaled 234,000, which represents a drop of 40% from a year earlier. The number of light breed eggs in incubators on Oct. 1 was 301,000—off 35% from a year ago.

RESEARCH

(Continued from page 1)

pany's experiences in designing and constructing an experimental layer house. He emphasized the importance of compactness and flexibility in the layout or arrangement of the different pens and said that he believed the ideal house should be 30 by 144 ft. This size, he said, allows for two rows of 12 by 12 ft. pens with a 6-ft. alleyway down the center. The 12 pens, he said, could be set up to allow greater flexibility in running a project.

"The Use and Abuse of Experimental Data From Swine" was the title of a talk presented by Dr. Merle Brinegar, Allied Mills, Inc. He cited several examples of how research data might be misinterpreted and cautioned his fellow researchers against forming conclusions from inadequate data.

Methods of increasing the efficiency of research through proper design of experiments were discussed by Dr. Walter H. Ott, Merck & Co., Inc., Rahway, N.J. He pointed out that it is advisable to analyze the organization of a research project before the research is started with a view to determining what data will be produced and how that data may be used in evaluating the research.

Dr. Ernest M. Parrott, a member of the Interdepartmental Committee on Nutrition for National Defense, was the speaker at a group luncheon. Dr. Parrott outlined the structure and functions of his group and showed projection slides of the committee's work in evaluating dietary deficiencies in countries having problems in human nutrition.

Technical Papers

Three technical papers and a business session made up the program during the afternoon of Oct. 16. The papers which were presented included:

"Nitrogen Metabolism and Digestion in Ruminants," by Dr. R. Grainger, University of Kentucky; "Criteria for Measuring Protein Requirements in Chicks," by Dr. Gerald F. Combs, University of Maryland; and "Standardization of Methods for Protein Quality," by Dr. P. H. Derse, Wisconsin Alumni Research Foundation.

The council plans to publish the three papers in detail for distribution to members and other interested scientists.

Three new members were elected to the council's executive committee during the business session. They are: Dr. J. Alec Campbell, food and drug laboratories, Department of Health and Welfare, Dominion of Canada, Ottawa; Dr. Walter A. Glista, Chas. M. Cox Co., Boston; and Dr. Harry W. Titus, Limestone Products Corp. of America, Inc., Newton, N.J.

ADM Names Soybean Purchasing Manager

MINNEAPOLIS—The appointment of Richard K. Davies as manager of soybean purchasing for Archer-Daniels-Midland Co., Minneapolis, was announced by A. C. Hoehne, vice president and manager of ADM's soybean division.

In this position, Mr. Davies will direct all of the company's soybean buying, formerly the responsibility of the late Forrest E. Benson, ADM vice president, who died Sept. 10.

Mr. Davies joined ADM's soybean accounting department in 1930 after attending the University of Minnesota. He was in charge of that section until 1945, when he became assistant soybean buyer.

He is a member of the crop improvement council of the National Scybean Processors Assn. and of the Minneapolis Grain Exchange and serves on the Exchange's coarse grain grades committee.

CONTROL

(Continued from page 1)

products which make up a very small portion of the formula.

R. F. Kneeland, Jr., assistant to the director of the Bureau of Enforcement, FDA, was named president of the organization to succeed John W. Kuzmeski, Massachusetts control official. L. A. Koehler, North Dakota, was named vice president to succeed Mr. Kneeland.

L. E. Bopst of Maryland was renamed secretary, and R. T. Weatherbee, Vermont, was elected treasurer. Mr. Bopst in the past has handled both the secretarial and treasurer's duties.

Official Actions

Here are some of the association's actions pertaining to definitions (a detailed report of these changes will appear in a subsequent issue of Feedstuffs):

The following sentence was added to the final note under alfalfa products — "Alfalfa meal or pellets or granules or other products consisting predominantly of alfalfa meal must be identified in the product name as (a) suncured, (b) dehydrated, or (c) mixed suncured and dehydrated."

The definition of meat by-products was revised to include liver among those parts of the carcass which may enter this product.

A new definition for ground barley, which also makes provision for describing crushed or rolled barley, was adopted. A tentative definition of oat products also was adopted.

Other tentative definitions established include grain sorghum grits, dried fish solubles precipitate, feeding phosphoric acid, steamed bone meal or cooked bone meal and feeding cane molasses.

Among the formerly tentative definitions now made official are: Poultry hatchery by-product, flax plant product, cereal food crumbs (with an editorial change), rice mill by-product, riboflavin supplement and yeast culture (T-22). The present official definition of the latter was dropped.

President's Address

John W. Kuzmeski, official chemist for the Massachusetts regulatory service and president of the control officials, told members "the widening scope of control activities" makes it imperative that they channel their efforts in the direction of matters directly connected with control laws.

"We must not dissipate our energy on tasks that have little or no relation to control work," he said. "We should not concern ourselves unduly with nutritional, pathological and other problems that are being handled adequately by those better qualified to do so.

"We have a full-time job taking care of our control responsibilities. We should seek the cooperation of, and cooperate with, federal, state and industry nutritionists, veterinarians, pathologists, etc., in the performance of our duties. However, in my opinion, we can render the greatest service by 'sticking to our last' and devoting our entire facilities to doing what we are best qualified to do—the fair and common-sense administration of the laws and regulations under which we operate."

Mr. Kuzmeski pointed out that research workers for feed companies "leave no stone unturned in their zeal to develop feeds that are as adequate nutritionally as it is possible to make them within the limits of practical economics." In this connection, he said that if research shows it is economically and nutritionally feasible to use ingredients such as ground corn cobs and screenings in certain rations, "it would be presumptuous on my part to question such use. My only concern is that such ingredients are declared and that the guaranteed claims are met.

"Anyone who looks back and makes a comparison between the relative efficiency of feeds manufactured even as late as 1950 and those of today, cannot help being amazed at the nutritional progress that has been made. The control official has had very little to do directly with this progress.

Competition Does It

"If the manufacturer is to stay in business and keep up with his competitors, he must strive at all times to market feeds that are as efficient as it is economically practical to make them. This incentive is such a far more potent force than any prodding by control officials for the up-grading of the quality of feeds that any effort by control officials in this direction would seem puny indeed."

When the Massachusetts Control Service is asked by an individual farmer for a comparison of feeds, he said, the office refuses to recommend one over the other. "All we can do is examine and analyze the feeds, and then make a report on whether the feed is as guaranteed. The farmer is advised to use both feeds and to make his own comparisons. Until the time the manufacturer guarantees that so many pounds of meat will be produced by so many pounds of his feed our control service will steer clear of making such comparisons."

He said his office prefers to have the farmer do the biological testing. His office will analyze a feed in question if the farmer runs into trouble. He said: "We are willing to analyze the feed for any nutritional or drug factor that a qualified nutritionist or pathologist suggests may be present either in insufficient amount or in toxic amount." Such an analysis is undertaken only upon recommendation of qualified experts in animal nutrition or disease, he said.

Small manufacturers who need outside help in the formulation of their feeds because they lack research facilities are referred to university poultry and dairy nutritionists. He said these manufacturers also have access to a great deal of literature on animal nutrition as well as the nutrition services of ingredient suppliers.

Speaking of the need to scrutinize regulations to make them fit the interests of farmers and the public, he said industry should be afforded ample opportunity to present its views on all proposed regulations.

"In our deliberations we should realize fully that any regulations either unnecessarily hampering the manufacture of feed or hindering its free movement from state to state increase the cost of feed to the farmer."

He suggested further that the individual state laws and official publications should not be cluttered up with regulations calculated to take care of the most minute problem that may conceivably arise. Given a set of laws and regulations that covers adequately the more important phases of feed control, he said, the control official who understands the problems of both the farmer and the manufacturer can use his good judgment in making reasonable decisions on minor matters not fully covered by the regulations.

W. E. Glennon, president of the AFMA, introduced the organization's new film, "Old MacDonald," and it was shown at the Oct. 16 session.

New Drug Regulations

Dr. Roland Gessert, veterinary medical division, FDA, Washington, reviewed the agency's regulations pertaining to new drug applications and described the circumstances under which such applications must be filed. Dr. Gessert said that FDA hopes to be able to provide assay methods to state control officials before applications for new drugs are accepted in order to facilitate effective feed control work.

An explanation of the necessity for today's complex feed formulas was provided the control officials by Dr. E. I. Robertson, director of research for John W. Eshelman & Sons, Lancaster, Pa. Dr. Robertson effectively used cartoon-type illustrations on a flannel board to emphasize his main points.

Provision for "carryover nutrition" in breeder rations for hens results in complex formulas designed to assure that adequate nutrients are available to the embryo, Dr. Robertson said. A similar principle applies to other species as well, he said. Another example of the need for highly-fortified feeds was cited by the speaker in describing stress conditions that affect poultry. When various stresses reduce the birds' feed consumption, higher powered feed can be provided to shorten the normal period of recovery, he said. It is also possible, he pointed out, to incorporate "built-in" protection from disease and other stresses.

Dr. Robertson also described how modern starter feeds for baby pigs provide more adequate nutrition for the litter than if the pigs were allowed to nurse the sow. The great variety of feeds being manufactured today results from increased knowledge of nutritional needs and the desire of manufacturers to serve feeders' individual requirements, he said.

Tests for Antibiotics

Antibiotics, hormones and enzymes were discussed by Dr. F. Howard Hedger, who is in charge of quality control for Chas. Pfizer & Co., Brooklyn.

"I feel that I can speak for all control chemists when I say that we are constantly striving for the improvement of tests or the adoption of new ones which will provide better quality and more stability as well as other desirable characteristics to these compounds which are classified as antibiotics, hormones and enzymes," Dr. Hedger said.

The speaker pointed out that fermentation is not new. It was learned by cave men, for example, that meat allowed to stand a few days was more pleasing to the taste than freshly-slaughtered meat. To primitive man, fermentation was a kind of magic.

More knowledge of fermentation processes was gained through the centuries, and the teamwork of many hundreds of scientists during World War II resulted in large-scale production of penicillin, he said. Penicillin opened the way to production of other antibiotics.

"The technology in the field of science and production over the past three decades has transformed the fermentation process from an art to a science," Dr. Hedger said. "Today chemists select and breed the exact species and strains of microorganisms necessary for specific chemical transformations."

G. S. Gruber, secretary of the Eastern Petfood Canners Assn., Stamford, Conn., discussed the particular problems of members of that industry in dealing with feed control regulations and the steps being taken to solve them. Since the organization of the eastern group in 1955, efforts have been directed toward giving members of the industry up to date information on control regulations, he said.

Mr. Gruber commented on some remaining problems in control faced by the canned pet food manufacturers. He said that the canners feel that sampling of one or two cans does not "provide a fair statistical basis for condemning a brand publicly." He pointed out that much larger samples are taken in checking dry feeds. Mr. Gruber also asked that the control officials consider a wider tolerance in fat content of canned pet foods and permit retention of negative statements on labels that are descriptive of actual package ingredients. He said, for example, that a cat food containing fish with the fish odor removed can best be labeled to reflect the improved quality by the phrase, "no fish odor."

"We are legitimate people in business and we want to weed out the illegitimate as much as you, and we are going to prove to you our goal is the same as yours," Mr. Gruber told the control officials.

Irwin B. Johnson

PUBLIC RELATIONS DIRECTOR—Irwin B. Johnson has been named director of public relations for the Chicago Board of Trade, Robert C. Liebenow, president, has announced. Mr. Johnson was with the National Committee on Boys and Girls 4-H Club Work for 17 years prior to his appointment to the board of trade position.

RENDERERS

(Continued from page 4)

derers' association for its successful use of joint research in diversifying its products in markets. "In our present economy," he said, "no business can be a fully successful one unless it constantly strives to improve the quality and diversity of its products or services to create an increasing desire on the part of the customer to buy them."

Walter C. Prill, educational services manager, Southern Counties Gas Co., Los Angeles, discussed the value of "brainstorming," the system of concentrated "thinking sessions" in which those participating do nothing but throw out whatever ideas come into their heads without exercising critical judgment on them. Many of the new ideas that crop up may be useless, the speaker pointed out, but the occasional useful one makes the entire process very worthwhile.

Robert E. Crohan, export and sales manager, tallow and grease department, Darling & Co., Chicago, predicted a continued rise in the export of American tallow and grease to foreign markets. He looked forward to the time "when a rising world standard of living finds every Chinese, Arab, Indian and African taking a Saturday bath with real soap." The U.S. has shifted from an importer to an exporter of tallow and grease products and most of this change has occurred since 1949, Mr. Crohan said.

Officers Reelected

The association reelected all officers as follows: President, Richard B. Mortimer, Peterson Mfg. Co., Los Angeles; first vice president, Ralph Van Hoven, Van Hoven Co., St. Paul; second vice president, Martin J. Rubin, H. M. Rubin Co., Long Island City; executive director, John J. Hamel, Jr., Valley Chemical Co., Mt. Pleasant, Mich.; secretary-treasurer, Miss Jamie C. Fox, Chicago.

In his annual report, Mr. Mortimer said: "The future of this industry will be perfect if you accentuate the positive; if you will develop a sales technique to sell the good points of the products we produce; if you will improve your products by proper and well recognized, good operating procedures; and if you will maintain a code of ethics in your operations which will be a credit to our industry, your association and yourself."

The meeting was the largest ever held by the association with 235 registered.

NEPPCO

(Continued from page 6)

catering to the chickens' senses. We have found no broad spectrum flavor available which will improve the taste for chickens of all feeds under all conditions. In fact, some commercial feed flavors we have tested were themselves offensive to the chickens. To be of value a flavor should increase consumption of feed, improve efficiency or production.

"We can accurately measure the reaction of the fowl to a flavor. We have found no miracle flavors, only a few that have value for specific jobs. For example, we can improve the acceptability of some medications. In liquid feeding where flavors are 25 or 50 times more readily perceived by the chicken the role of flavor addition becomes more important. We have been identifying the most highly offensive materials added to the chicken's feed.

"**Cannibalism:** Theoretically the application to the individual birds of a spray of offensive flavor to reduce cannibalism is possible. However, in practice the material can only be as effective as the manner of application. Flavor sprays only temporarily make picking by the birds distasteful; they have no effect on the cause of cannibalism. The results of these sprays have been promising. The development of better methods of application should improve the degree of effectiveness."

The question "Do quality egg programs pay off?" was discussed by a panel.

A producer, Clark Fleming, Belleville, Pa., said that if even part of the reports on the increased influx of high quality midwestern eggs into northeastern markets is true, "it is high time that egg producers in this area realize that a good quality program in production of market eggs is essential."

Mr. Fleming also cited evidence indicating that the effort to produce a high quality pack of eggs will pay off. He said that he gets a premium of 3 to 6¢ doz. for his eggs, as compared with prices received by other producers in the area. A marketer and a buyer on the panel also pointed to the advantages of producing quality eggs.

Another feature of the program was a talk on the solar poultry house by Dr. Glenn O. Bressler, Pennsylvania State University. He said it has been shown that layers housed at 1 sq. ft. per bird in the solar house perform almost equally as well as pullets housed at 3 sq. ft. in a well insulated conventional house. Since egg production can be maintained at a satisfactory high level, he said, the real advantage of the solar house is its relatively low cost, being considerably less per bird. Labor also was found to be somewhat less. And the cost of operating the mechanized solar house is low.

Dr. Bressler said that the present solar house and its equipment are only the beginning of a revolutionary movement in poultry production methods.

Poultry Health

In a panel on poultry health, Dr. W. R. Dunlop of the University of New Hampshire discussed research progress on the control of PPLO (pleuro-pneumonia-like organism) in chickens. He mentioned certain studies and noted that New Hampshire experiments in controlling air sac through prevention of hatching egg transmission of PPLO under field conditions involved testing over 439,664 breeders and their progeny. Findings, he said, were:

"1. PPLO antigens available need considerably more research work before the desired accuracy may be obtained.

"2. No antibiotic so far studied will completely prevent hatching egg transmission of PPLO.

"3. The most likely method to obtain negative breeding stock is to grow and maintain birds in small groups.

"4. Once these units are negative to PPLO, they produce negative chicks without antibiotic injection.

"5. Broilers which come from negative breeders have not come down with air sac disease even when in an infected area.

"6. Over 800,000 broilers have been produced from negative breeders under various field conditions with no occurrence of air sac disease."

The exhibits at the exposition featured many supply and equipment items. One of the features was a "push-button" exhibit which included a newly developed colony cage system for laying birds and an egg gathering belt which collects the eggs from as many as 1,800 hens in less than five minutes. Feed and watering are on a push-button basis, too.

Harold Klahold, Preston, Md., was reelected president of NEPPCO. Renamed as secretary was Russell Sturtevant, Halifax, Mass., and as treasurer, James C. Weisel, Rosemont, N.J.

Council officials announced that next year's exposition will be held again at the Pennsylvania Farm Show Building at Harrisburg, on Oct. 7-9.

Support PENB

In a resolution adopted at the meeting, the NEPPCO board urged poultrymen to continue and expand their support of the Poultry & Egg National Board. The board recommended that the poultry industry maintain a unified approach in poultry product promotion. During the meeting, emphasis was placed on the fact that PENB, in a recent news release, did not recommend formation of a national egg council but merely accepted the report of its egg advisory committee.

The resolution said, in part:

"We (1) urge all NEPPCO members to continue and increase their support of PENB; (2) that PENB itself strengthen its fund raising division, with professional direction to include all major segments of the industry; (3) that any effort to disembody segments of the industry from the unified approach be strongly resisted and the effort thus released be directed to an even better promotional program of which we know PENB is capable and best fitted to do; (4) that PENB seriously consider structural reorganization of its directorate to the end that its policy making body may work quickly and efficiently to serve the industry representatives; (5) we recognize the value of the counsel and advice of the state, local and regional workers for PENB and feel that provision must be made that this valuable service to the industry be continued in advisory councils."

William T. Bess, Jr.

UNION BAG APPOINTMENT — Union Bag-Camp Paper Corp. has announced the appointment of William T. Bess, Jr., as assistant to the president. A member of the Union organization since 1950, Mr. Bess served most recently as assistant director of multiwall bag sales.

CCC Inventory Shows 799,000,000 Bu. Corn

WASHINGTON — A total of 799,211,000 bu. corn—with a cost value of $1,475 million—was in the inventory of the Commodity Credit Corp. on July 31, the U.S. Department of Agriculture reports.

Other feed grains and their cost values in the CCC inventory include: Grain sorghum, 43,355,000 cwt., $104,652,000; barley, 66,392,000 bu., $80,926,000; and oats 27,874,000 bu., $22,760,000.

As of July 31, the investment of CCC in price support programs amounted to $7,276,535,000—made up of loans outstanding of $1,955,438,000 and the cost value of inventories, $5,321,097,000. Wheat accounted for considerably more than $2 billion of the total cost value.

Williamson to Build New Atascadero Mill

WHITTIER, CAL.—Contracts have been awarded to John W. Williamson & Sons, Inc., Whittier, for construction of a new formula feed mill for the Poultryman's Cooperative Association of Southern California at Atascadero, Cal.

The plant will be completely automatic and provide for bulk handling of feed ingredients throughout the mill on a push-button system, insuring a highly efficient manhour output per ton, officials of the Williamson firm said.

The new plant will replace a mill which burned a few months ago. Capacity of the new mill will be approximately 240 tons per eight-hour day.

Twin City Nutrition Meeting to Be Oct. 22

ST. PAUL — The first meeting of the 1957-58 season for the Twin City Nutrition Seminar will be held at 7:30 p.m. Oct. 22 at Peters Hall on the St. Paul campus of the University of Minnesota.

Dr. C. L. Cole of the university will be in charge of the program, which will deal with ruminant nutrition. Two university staff members will speak. Dr. J. B. Williams will discuss calf milk replacers and calf starters, and Dr. O. E. Kolari will report on beef cattle nutrition studies at Minnesota.

STILBESTROL

(Continued from page 7)

way as the product is handled for cattle. It will be sold only to feed manufacturers who have obtained clearance to add it to their feeds.

Farmers will be able to buy both protein supplements and complete feeds containing stilbestrol. To test uniformity of the chemical in sheep feeds and supplements, Lilly will again offer free assays to feed manufacturers, Mr. Varnes said.

In making the announcement, Lilly cited the results of 10 college and company tests of the feedlot performance of sheep fed 2 mg. of stilbestrol daily. Feeding periods ranged from 54 to 105 days. Daily gains in the tests ranged from an average of .24 to .63 lb. for control animals, with an over-all average of .32 lb. Daily gains of hormone-fed sheep ranged from .30 to .92 lb., with an average for all tests of .40 lb. This represented an average 25% increase in gain. Feed savings averaged 15%, ranging from 0 to 38%. Experiments which had data on costs per cwt. of gain showed an average of $17.49 for control animals and $13.62 for stilbestrol-fed animals.

Grain Shippers Hear Pillsbury Official

MINNEAPOLIS—U.S. investments in foreign projects for processing agricultural products are sound if they can be serviced, if an adequate supply of raw agricultural materials is available at competitive prices and if there is an adequate mark-up in the end product so that the enterprises can stay in business.

This is the contention of A. B. Sparboe, vice president in charge of exports, Pillsbury Mills, Inc., Minneapolis, as stated in a talk at the Minneapolis Grain Shippers Assn. meeting here.

Mr. Sparboe criticized the "fire sale" aspect of P. L. 480 and said "it is not good to continue this program indefinitely because it violates principles of sound business." He derided the idea of "give-away" programs because the U.S. is not getting back anything in return. "Our company cannot buy goods and not expect to pay for them, and the same principle ought to apply to government." An indispensable aspect of foreign commerce is that trade must be mutually beneficial to both countries involved, he said.

"There is nothing wrong with importing resources of which we are running low or which we do not have," Mr. Sparboe said. "We must be international or we'll be dead ducks," he said, adding that the U.S. must fight communism politically as well as economically.

"How much can we export?" Mr. Sparboe asked. "This depends on the dollar supply of foreign countries. If we export faster than they can pay for our goods then the trade has to be done on credit," he said.

The year 1958 will be a crucial congressional year, Mr. Sparboe said. The expansion of P. L. 480 financial authorizations will be sought, the Reciprocal Trade Agreements Act will come up for renewal and anti-dumping legislation will be reviewed.

Robert B. McWhite, Russell-Miller Milling Co., president of the association, presided at the meeting which was held at the Minneapolis Athletic Club.

MARKETS

(Continued from page 2)

$1 ton lower as a reflection of the previous week's sharp millfeed price cut. Millfeed production by Oregon and Washington mills continued in good volume at around 5,850 tons compared with 6,050 tons the previous week.

Portland producer paying prices for light type hens closed the week unchanged after gaining 1¢ lb. and then losing it. Listings for heavy hens were 1¢ lb. higher at the inside of the range.

Portland and Seattle producer paying prices for eggs were unchanged to 2¢ doz. higher on the various grades and sizes. Small ones gained the most.

Most dealers offered poultrymen at Portland a 44@46½¢ range for AA grade large eggs with A large at 39@41½¢ and A mediums at 34@36½¢. A grade small eggs sold to dealers at 24@28½¢, f.o.b. Portland.

The dressed turkey market was about steady for hens and unsettled for toms. Most growers were having birds custom dressed and frozen under their account.

California

The production of formula feeds remained more or less steady during this past week and prices averaged about unchanged. Laying feeds seemed to be in the best demand which reflected a good egg market.

Most ingredient prices showed no appreciable change although soybean oil meal slipped a little more and millfeeds continued to sag to the extent of $1 to $1.50 ton.

Egg prices advanced 1 to 1½¢ on

large, 1¢ on small, but lost about ¾¢ on medium. Wholesale trading was light and interest was mainly in large.

Live poultry prices were steady on fryers at 17½ to 19¢ at the ranch but ice packed fryers were easier at 28½ to 30½¢, delivered Los Angeles. Turkey prices unchanged at 21 to 21½¢ on young hens but easier at 18½ to 19¢ on young toms. Prospects appeared poor for this market to show any improvement. Some new cattle began to arrive at feed lots in the Imperial Valley but Los Angeles continued to report a loss in numbers on feed. There was no improvement in the spread between feeders and fat cattle.

Southeast

The feed demand picked up noticeably this week. However, the feed ingredient market remained on the slow side.

Pastures were reported to have soured in some large areas of the territory, due to recent heavy rains. This has helped increase dry lot feeding to some extent.

Baby chick placements in the North Georgia producing area were still relatively high and poultry feed manufacturing continued to be good.

The shell corn market in the area, which was very tight due to adverse weather conditions, declined sharply with clear weather, and supplies were reported to be burdensome at many producing points. As a result, prices bid by buyers were lowered considerably and were reported to be about equal to last year's low level.

The fruit crop in Florida has failed to mature as early as had been expected and, as a result, early production of citrus pulp has been delayed. The expected starting time for early producers has now been delayed to about Nov. 1. Supplies were tight and demand held up well at going price levels. Cottonseed was moving well into the crushing mills which appeared to apply pressure to the nearby meal position. Asking prices have been lowered almost daily in order to try to stimulate buyers to take immediate shipment material.

Feed mill running time was steady to slightly better and most reports indicated feed prices were unchanged to slightly lower. Truck load deliveries, which are a big factor in the Southeastern feed market, were running behind schedule due to the fact that fruit and vegetables in the southern part of the territory were not moving northward at a rate originally expected by most of the feed trade. This has caused delays both at the point of origin and at the feed mixing plants. This situation is expected to clear up in the nearby future.

Central States

A small pick-up in tonnage was reported by formula feed manufacturers during the week ending Oct. 16, reflecting in some part the development of inclement weather over some parts of the area. Some observers have blamed excellent pastures and weather which have permitted grazing and foraging for part of the slumping demand for formula feeds.

The pick-up was most apparent in cattle feeds, market men said, closely followed by hog feeds. The outlook for the remainder of the month also indicated that the new level of activity attained this week will hold, although the easiness of grain and ingredient prices worked against filling pipelines and expanding inventories.

Most mills were operating on a one to two-day backlog of orders, and no shutdowns were reported this week. Prices for manufactured feeds generally are unchanged.

Northeast

Consumer interest in formula feeds lagged under the influence of continued warm, dry and sunny weather. The good weather of the last three to four weeks has given farmers an excellent chance to put their harvests under cover.

Rains were forecast, however, and the trade predicts that sales will improve next week. Some manufacturers planned to step up their running time to 40 hours.

Egg mashes and dairy feeds continued to be the mainstay of the market and there was a fair turnover in turkey and broiler feeds.

Broiler prices in the East were about steady. Offerings in the Buffalo area were again too small to establish a market.

Eggs were still strong in all directions and one feed mill spokesman said "they are the hope of the future." Prices in the Buffalo area were up to 67@68¢ doz. for the extra large white size.

Some price adjustments were made in ingredients. Corn was steady and oats and barley were up 1¢ bu. The demand for milo has brought it up in line with other grains. Molasses was still weak and was biddable under current quotations.

Soybean oil meal was a shade lower and linseed oil meal was also weak and off $1 ton.

Fish meal held unchanged but meat meal declined $2.50 ton. Pressure was expected to build up in brewers' grains. Distillers grains were down $1 ton. Hominy feed was coming more into favor and moved up 50¢ to $1.

The demand for bran for dairy feeds picked up a little in eastern New York and in the New England area. Millfeed shipping positions were in good shape and prices were unchanged, with the exception of red dog, which declined $1.50.

The running time of formula feed manufacturers averaged 36 hours last week, with the low point at 32 hours.

Ohio Valley

After more than a month of excellent business, sales of formula feeds slumped considerably this week as farmers concentrated on the harvesting of late fall crops and otherwise were busy with preparations for the approaching winter. An ample supply of farm feeds was thought to be a contributing factor, too.

The turkey fattening season was about ended and only nominal interest was shown in chick replacements. Sales were largely concentrated on hog and dairy feeds, which were moving out in quite satisfactory tonnages.

The situation seemed likely to continue in view of the satisfactory prices at area stockyards, which were strong to 50¢ higher this week. Prices for most grades of eggs also advanced 1@3¢ per case, while fryer prices were steady to slightly higher. Although ample quantities of turkeys were being marketed, prices for all weights remained steady.

Despite a decrease in volume, formula feed prices eased off an average of only 25¢ ton this week in this area, although further price cuts are expected during coming weeks. With virtually no backlogs of orders, most area mills were operating this week with but two shifts and, in some instances, with reduced work forces.

INDEX OF ADVERTISERS

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Abbott Laboratories
Aeroglide Corporation
Agri-Tech, Inc. 16
Ag Sell Co., The 60
Alabama Flour Mills
Albers Milling Co. 67
Albumina Supply Co., Inc. 53
Allied Chem. & Dye Corp., Nitrogen Division
Allied Mills, Inc.
Amburgo Co., Inc. 32
American Agri. Chemical Co. 25
American Cyanamid Co. 48, 49
American Dehydrators Assn. 81
American Elev. & Grain Div.
American Farm Equipment Co.
American Mill Serv. Co., Inc.
Anderson Box Co.
Anderson, V. D., Co. 21
Andrews, John
Andrews Machine Co. 66
Arcady Farms Milling Co.
Archer-Daniels-Midland Co.
Arkell & Smiths
Armour & Co. 14
Aubrey Feed Mills 38

Baker, H. J., & Bro.
Baker, J. T., Chem. Co.
Barker, Moore & Mein Co.
Barnard & Leas Mfg. Co., Inc. 32
Baroid Div., National Lead Co.
Bartlett, C. O., & Snow Co. 7
Barton Salt Co., The
Bates Grain Co. 81
Baughman Mfg. Co., Inc.
Baxter, A. E., Engineering Co.
Bemis Bro. Bag Co. 23
Berg, Paul
Bigelow Sales Co.
Black, Silvells & Bryson, Inc. 57
Blatchford Calf Meal Co. 79
Blomfield-Swanson
Borden Company
Bosworth Commission Co.
Bowman Feed Prod., Inc. 75
Bremco Alfalfa Mills, Inc. 43
Brewers Yeast Council, Inc.
Brower Manufacturing Co. 74
Brown, Fred G., Pulv. Co. 58
Bryant Engineering Co.
Burlap Council, The
Burrell, James H., & Co., Inc. 71
Burrows Equipment Co. 44
Burrus Feed Mills
Butler Chemical Co.
Butler Mfg. Co.

Calcium Carbonate Co. 40
California Pellet Mill Co. 26
Canadian Peat Moss, Ltd.
Caple, A. B., Co.
Cargill, Incorporated 84
Chambers, John C., Co.
Champion Portable Mill Co.
Chantland Mfg. Co.
Chase Bag Co. 80
Checkerboard Grain Co. 68
Chemo Puro Mfg. Corp.
Chicago Feed Ingredient Co.
Citrus Processors Assn.
Cleveland Vibrator Co., The 72
Clinton Corn Processing Co. 25, 52
Clofine, Herbert K. 20
Cobelex, Campagnie Belge
Colby Milling, Inc. 65
Collier Livestock Feeder Co.
Columbia Phosphate Co. 14
Columbia Quarry Co. 53
Columbian Steel Tank Co.
Commercial Solvents Corp.
Consolidated Blenders, Inc. 45
Continental Grain Co. 87
Continental Steel Corp.
Corn Products Sales Co. 69
Coronet Phosphate Co. 9, 63
Crete Mills 53
Cromwell Paper Co. 64

D. C. A. & Co. 18
Daffin Mfg. Co.
Dannen Mills, Inc. 42
Davis, H. C., Sons Mfg. Co. 42
Dawe's Laboratories, Inc. 17, 69
Day Company, The
Daycom, Inc. 10
Dehydrating Process Co.
Devold, Peder, Oil Co. 14
Diamond V Mills, Inc.
Distillation Products Industries 33
Distillers Feed Research Council
Doty Technical Laboratories
Douglas Chemical Co.
Dow Chemical Co. 18
Duplex Mill & Mfg. Co. 51
DuPont de Nemours & Co., Inc., E. I.

Easland, J. W., & Sons 65
Early & Daniel Co. 78
Eastman Chemical Prod., Inc. 58
Ehrsam, J. B., & Sons Mfg. Co., The 41
Elam Grain Co. 34
Elk Valley Alfalfa Mills, Inc.
Entoleter Division, Safety Industries, Inc.
Erie Mfg. Co.
Eschenheimer, Rudy, Co.
Esheiman, John W., & Sons
Ewing, Ray, Co.
Excelsior Milling Co.

Fafard, Conrad, Inc.
Farm and Ranch 11
Farmers Friend Mineral Co.
Feed Associates, Inc.
Fischbein, Dave, Co.
Flambeau Milling Co.
Flavor Corp. of America 57
Flour Mills of America
Food Mach. & Chem. Corp. 29
Food Research Lab., Inc.
Forster Mfg. Co. 79
Fort Smith Cotton Oil
Foster & Felter Co., The
Fox Co. 76
Fruen Milling Co. 7
Fulton Bag & Cotton Mills

Gabrielson Feeds
Gaddis, R. J.
Garelick Bros.
Georgia Peanut Co.
Glidden Co., The
Gorton-Pew Fisheries 88
Grace Chemical Co.
Grain Processing Corp. 27
Gump, B. F., Co.

Hales & Hunter Co.
Hallet & Carey Co.
Hand, Peter, Foundation 3
Hardy, H. E., & Co.
Harris-Crane, Inc. 18
Harshaw Chemical Co. 70
Hayes and Stolz
Haynie Menhaden Prod., Inc. 44
Heard-Kinard-Smith, Inc. 72
Hail Co., The
Helm Manufacturing Co.
Henderson Mfg. Co.
Hercules Powder Co.
Hess & Clark, Inc.
Heterochemical Corp. 31
Heywood & Rabb, Inc.
Hilltop Laboratories 4
Hoffman-Taff, Inc. 46
Hoganson Construction Co.
Hogg, N. D., Ltd.
Holt Products Co. 81
Homer Mfg. Co., Inc., The
Honeggers' & Co. 46
Honeymead Products Co.
Hot Spot Detector, Inc.
Howes, S., Co., Inc. 62
Hubbard Milling Co.
Hubbell, Charles H.
Hy-Line Poultry Farms

Ibberson, T. E., Co. 72
Illinois Soy Products Co.
Indian Jute Mills Assn.
International Minerals & Chemical Corp.
International Paper Co.
International Salt Co., Inc. 80
Iowa Limestone Co.

Jackson, Gilbert, Co., Inc.
Jacobson Machine Works 65
Jersee Co. 15

Kansas Soya Prod. Co., Inc.
Kees & Company 25
Kellogg, Spencer, & Sons, Inc.
Kemp, C. M., Mfg. Co.
Kent Feeds
Kent, Percy, Bag Co., Inc. 76
Keystone Steel & Wire Co. 30, 31
Kindstrom-Schmoll Co.
Koelsch, Charles J., Grain Co. 18
Koppers Co., Inc.
Kraft Bag Corp. 40
Kraft Foods Co. 71

Laboratory Construction Co.
La Budde Feed & Grain Co. 70
Land O'Lakes Creameries, Inc.
Lauhoff Grain Co. 74
Leftwich, J. H., & Co., Inc. 51
LeGear, Dr., Medicine Co. 76
Lilly, Eli, & Co. 43
Linck, O. E., Co., Inc.
Lima Armature Works 82
Limestone Products Corp. of America 35
Loncala Phosphate Co.

McCabe Grain Co., Ltd. 62
McKesson & Robbins, Inc. 15
Maney Bros. Mill & Elev. Co. 4, 88
Marco Chemical Co.
Martenis, C. J., Grain Co.
Martin, Theo. W., & Son 67
Mayo Shell Corp. 69
Melos Mfg. Co.
Merchants Chemical Co., Inc.
Merck & Co., Inc. 13, 73
Mid-Continent Grain Co. 88
Mid-West Business Exchange 82
Midwest Dried Milk Co.
Milbrew Co.
Miller Manufacturing Co.
Miller Publishing Co., The
Minneapolis Sewing Mach. Co.
Minnesota Linseed Oil Co. 26
Minnesota Specialty Co., Inc.
Mitchell, Hutchins & Co. 53
Monsanto Chemical Co.
Morton Salt Co. 39
Mulligan and Son 87
Munson Mill Machinery Co.
Murphy Products Co.
Myers-Sherman Company 22, 54

Nagel, Herman, Co. 65
Natl. Alfalfa Dehydrating & Mfg. Co. 92
Natl. Cottonseed Prod. Assn., Inc.
Natl. Distillers Prod. Co. 67
Natl. Molasses Co. 26
National Renderers Assn. 35
National Turkey Federation Underwriters
National Vitamin Products Co.
Nellis Feed Co. 64
New Century Co., The
New England By-Prod. Corp. 88
Nichols Incorporated 65
Nigh, W. H., & Co. 20
Nitrogen Div., Allied Chem. & Dye Corp.
Nootbaar, H. V., & Co.
Nopco Chemical Co. 20, 21
North American-Dodgen
North American Trading & Import Co. 81
North Carolina Granite Corp. 55
North East Feed Mill Co.
Northwest Brewers Yeast, Inc.
Norwood Mfg. Co.
Nutrena Mills, Inc. 84

Olavarria & Co., Inc.
Oyster Shell Corp. 38
Oyster Shell Prod. Corp. 42

Pabst Brewing Co.
Pacific Processing Corp. 50
Paper-Calmenson & Co. 34
Pardee Company, The 34
Park, Philip R., Inc.
Parks, J. P., Co. 7
Parrish & Heimbecker 34
Parrish, N. K.
Paxton Processing Co., Inc. 83
Pay Way Feed Mills, Inc.
Peavey, F. H., & Co. 74
Peerless Eqpt. Co., Inc.
Petersen, Bernh. 69
Pfizer, Chas., & Co. 6, 36, 37, 78
Phelps Dodge Refining Corp. 78
Pittsburgh Plate Glass Co.
Pless & Sheahan 54
Pope Testing Laboratories, The
Prater Pulverizer Co. 26
Pratt Bros. Co. 87
Premier Peat Moss Corp. 60
Productive Acres Mfg. Co.
Property Owners Mutual Ins. Co.
Publicker Industries, Inc. 81

Quaker Oats Co.

Ralston Purina Co.
Rapids Machinery Co. 12
Raymond Bag Corporation 59
Red River Alfalfa Co.
Red Star Dairy Supply Co.
Red Star Yeast & Prod. Co. 84
Rees Blowpipe Mfg. Co.
Regniers, Emile, Co. (U.S.A.), Inc.
Reliance Feed Company
Richardson, James, & Sons
Richardson Scale Co.
Riley Feed Co.
Rion Crush Stone Corp.
Rohloff Bros., Inc. 69
Roskamp Huller Mfg. Co., Inc. 10
Ryde & Co.

St. Regis Paper Co. 75
Salsbury's, Dr., Labs. 11, 46
Save Way Feed Mills
Scanlan, Ivan, & Co.
Schenley Distillers, Inc.
Schuster-Wise Gr. & Feed Co.
Schutte Pulverizer Co., Inc.
Schroeder Sales Co.
Scroggins Grain Co. 12
Seagram, Joseph E., & Sons, Inc.
Seco, Inc. 38
Sedberry, J. B., Inc. 24
Seedburo Equipment Co. 47
Shellbuilder Co. 77
Sievert, C. W., & Associates 47
Silmo Chemical Corp. 47
Simonsen Mfg. Co. 77
Sinclair Chemical
Small, The W. J., Co. 5
Smith, Edward E., & Co. 43
Soft Phosphate, Inc.
Southwest Mill Supply Co.
Sparks-Waters-Farnen, Inc. 18
Special Products, Inc.
Specifide, Inc.
Spencer Kellogg & Sons, Inc.
Sprout, Waldron & Co., Inc. 19, 62, 68, 70
Squibb, E. R., & Sons
Stabilized Vitamins, Inc.
Staley, A. E., Mfg. Co. 60
Staley Milling Co.
Standards Brands, Inc. 35, 66, 80
Standard Feed & Fert., Inc. 61
Stone Mountain Grit Co.
Strong-Scott Mfg. Co.
Sunset Feed & Grain Co. 58
Superior Feed Co.
Swanson, Carroll, Sales Co. 58
Swift & Co. 66
Syntha Lab.

T. D. F. Company 18
Tamms Industries
Taste Engineering, Inc. 46
Thayer Scale & Eng. Corp.
Thomer Equipment Co.
Thompson Printing Co. 42
Ti-Co Industries 88
Tobias Enterprises 44, 64
Tringham-Todd Const. Co.

Ultra-Life Laboratories, Inc. 57
Union Bag-Camp Paper Corp. 61
U. S. Industrial Chem. Co.
Universal Hoist Co. 71
Upjohn Company, The

Van Dusen Harrington Co. 74
Vineland Poultry Labs.
Vitamins, Inc. 61
Vita-Vax, Inc. 75
Vitron Corp.
Vy Lactos Laboratories, Inc.

W-W Grinder Corporation 81
Wallace & Tiernan Inc.
Warren-Douglas Chemical Co.
Weller, B. I., Co.
Wells, Ralph, & Co.
Wenger Mixer Mfg. Co. 16
Western Condensing Co. 77
Western Yeast Co.
White Shell Corp.
Whitmoyer Laboratories, Inc. 53
Whitten Co., The 64
Wilhoit Laboratory
Wilson & Co., Inc.
Wilson, R. S., Co.
Wirthmore Feeds 54
Wisconsin Alumni Research Foundation 83
Woodward & Dickerson, Inc. 24

Young, John F., Co.

Zellers' Laboratories 40

Alfalfa Nutrition

Minerals in Rumen Nutrition

Dr. Wise Burroughs and co-workers in a report on the "Influence of Alfalfa Hay and Fractions of Alfalfa Hay Upon the Digestion of Ground Corncobs" show that alfalfa hay or meal contains inorganic nutrients which are essential to rumen micro - organisms involved directly in roughage digestion.

The results obtained from this study further substantiate the results obtained earlier (Burroughs et al, 1949) that alfalfa hay contains nutrient(s) in addition to protein which in some way protects it from being digested to a lesser extent when fed in the presence of starch. This nutrient(s) appears to be obtained in sufficient amounts in alfalfa so that when a poor quality roughage is fed, such as corncobs, in conjunction with alfalfa, the poor quality roughage is also benefited.

The nature of this unknown nutrient(s) would appear to be partially or totally soluble in water and in part or totally associated with the inorganic constituents contained in alfalfa hay. The evidence thus far presented can best be explained on the basis that the unknown material(s) under consideration in alfalfa hay is an essential nutrient(s) for rumen micro-organisms involved in roughage digestion. This view is further strengthened by in vitro roughage digestion studies (unpublished data) with rumen micro-organisms. The addition of alfalfa ash and certain complex mineral mixtures definitely increases the ability of rumen micro-organisms to digest cellulose as well as roughage dry matter under controlled laboratory conditions.

The importance of these findings to livestock production, in addition to their academic interest, would seem to lie in the possibility that poor quality roughages may need special mineral supplementation. Also, the probability exists that quality in roughages, as it applies to livestock feeding, may be dependent to a large extent upon the mineral make-up of the roughage in supplying nutrients for rumen micro-organisms involved directly in roughage digestion or utilization.

Dr. A. Allen Heidebrecht also reports the following: "It is interesting to note that the ash of alfalfa provides a growth response when added to rations containing high levels of poor quality roughage."

From the foregoing, it is evident that inorganic nutrient(s) plays a vital role in rumen nutrition. One of nature's abundant sources of this vital nutrient(s) is dehydrated alfalfa. In developing your rumen feed formulas, be sure to include adequate amounts of National Dehydrated Alfalfa to insure top feed performance.

Burroughs, Wise; Paul Gerlaugh and R. M. Bethke—*"The Influence of Alfalfa Hay and Fractions of Alfalfa Hay upon the Digestion of Ground Corncobs" — Published in the Journal of Animal Science, Volume 9.*

Heidebrecht, A. Allen—*"Nutrition Deficiencies in Range Cattle"— Pages 28-32, abstracts of papers presented at the Texas Nutrition Conference, October 2, 3, 4, 1957, College Station, Texas.*

Inorganic Analysis* (17% Dehydrated Alfalfa Meal)

Calcium	**2.02**	**Iron**	**.033**	**Phosphorus**	**.23**
Cobalt	**.0004**	**Magnesium**	**.39**	**Potassium**	**2.33**
Copper	**.001**	**Manganese**	**.0053**	**Sulphur**	**.41**
Iodine	**.0014**	**Molybdenum**	**.0051**	**Zinc**	**.001**

*Doty Laboratories, Kansas City, Mo., 1957

2nd of a series featuring the importance of Dehydrated Alfalfa in Poultry and Livestock Nutrition

NATIONAL ALFALFA
DEHYDRATING & MILLING CO.
Board of Trade Building, Kansas City, Missouri